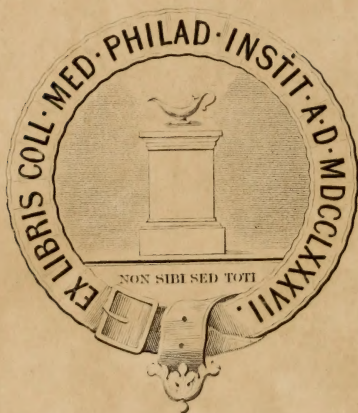




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ORIGINAL COMMUNICATIONS.

ART. I.—*Puerperal Fever*. By H. G. LANDIS, A.M., M.D., of Niles, Ohio.

The objections to the term “puerperal fever” are much more weighty than those, for instance, against “cholera.” If it were a mere misnomer of an individual disease, there would scarcely be an objection sufficiently strong to overcome the weight of long usage. But under cover of this name utterly incongruous diseases have always been treated of, and are yet, to a great extent. So firm a hold has it obtained that men of unquestioned ability have almost invariably attempted to square facts with the name, rather than describe the manifold pathological conditions which, anacconda-like, it has embraced, under their proper headings. This statement is fully borne out by a study of the progress of opinion since the term was first used. Witness the tabular statement of Churchill,* from Hippocrates down, and the admirable historical sketch by Winckel.† From a comparatively early date the term has been combatted. Robert Lee‡ objected to it, and desired to place in its stead “inflammation of the uterus and appendages.” Churchill tells us

* System of Midwifery. Second American edition, page 540-1.

† On Child-bed. American edition, page 312, *et seq.*

‡ Churchill. Op. cit., page 540.

that at first he adopted Lee's views, but finally abandoned them. Why? Lee's experience had been such that local inflammations were always associated with febrile disturbance after parturition—as had apparently been that of Churchill also; but later he finds fever without apparent lesion, and throwing overboard Lee's and his own former experience, finds it to be a specific malignant fever. Going further, and finding by wider comparison that nearly every observer has held different views, he comes to the final and illustrious conclusion that the "type of the disease varies in different epidemics;" which is as though a physician, accustomed to calling all the exanthemata by the name "skin fever," should, after repeated combats with scarlet fever, measles, *et id genus omne*, come to the conclusion that the type of "skin fever" varied in different epidemics. This peaceful termination of the dispute in Churchill's mind has been handed down to the profession as a rich legacy. There is no longer any need for each physician to insist on puerperal fever being a particular inflammation or specific disease; he would now be warranted in describing his own special epidemic of the fever, which has been done as late as January, 1875, by Dr. Jno. S. Parry, who, in the American Journal of the Medical Sciences, describes "a peculiar form of puerperal fever." Dr. Parry was a physician of singular erudition, and an authority in matters obstetrical at an age when few men have more than begun to work. As late as October, 1876, Dr. R. P. Harris, in reviewing the Transactions of the Obstetrical Society of London, while stickling for the term "puerperal fever," pens the following sentence: "Three physicians of this city once examined a case of erysipelas after death, and were all called in the following night to cases of labor. The three women all took child-bed fever and died."

To return for a moment to Churchill:* "The late Dr.

* Op. cit., page 543.

Labatt mentioned to me that he had known a patient laboring under typhus fever, and brought into the lying-in hospital, originate puerperal fever in the same ward in women who had recently been confined." Now, would any physician be believed who would state as follows: "Three physicians once examined a case of small-pox after death, and were all called in a few hours to see children who had cut their fingers with new knives. In the course of the week all the children so attended were attacked with scarlet fever." "*Credat judæus apelles, non ego.*" Would any reputable practitioner reason thus if he were not chained by the name and its inherent theory? We may note, also, that the confusion complained of is neither imaginary nor out of date, but a living evil which has withstood such attacks as the following: Meadows,* in speaking of the term says, after many things which should be written in letters of gold, "I believe that we should have much clearer and truer views of the pathology of the puerperal state if we could discard altogether a specific title which has long since ceased to have any sound scientific meaning; it is, in fact, a term which is used to cover a variety of meanings, and is, unfortunately, not only powerless for good, but all-powerful for evil, inasmuch as it is apt to divert men's minds from truth and to satisfy them with the husk of falsehood." Now, it really makes no difference that there has at last been isolated a distinct disease, more or less identical with septicæmia, which fills the role of a puerperal fever. So long as the term is used the labors of Semmelweiss and Winckel will be unavailing. Their names can only be added to the long list which begins with Hippocrates, as advocates of still another variation in type of this remarkable fever, for they have, to a great extent, disregarded the observations of their predecessors, and their conclusions contain, by implication, the

* Manual, page 445.

reflection that such observers as Sydenham, Denham, Bichat, Collins, and hosts of others, were entirely mistaken, when the truth is that they only included in the term various inflammatory or febrile affections. Thus Schroeder, taking no notice whatever of the fact that different diseases have been called by this name, defines* it dogmatically as including "all those diseases of puerperal women which are caused by the absorption of septic matter." And further, these are the accepted conclusions, as yet, only of the German schools. England gives her assent slowly, and the recent pitched battle in the London Obstetrical Society seems to have left the matter where it was before. In this country there are no systematic writers to advocate it at all. No less a person than Tanner,† who specifically claims to have some acquaintance with Winckel's writings, retains the name and divides the disease into four forms. His first variety appears to be simple peritonitis; the other three are so incompletely detailed as to be unrecognizable as distinct diseases. Leishmann‡ speaks of it as a distinct zymotic fever, originating in a special poison. Is he speaking of the same disease that Tanner is? Fordyce Barker§ also believes that it is an essential fever; but surely he, too, must occupy a different stand-point. It is needless to more than mention these well-known differences. When the two knights in the fable discovered that they had to do with a *double* shield, all the differences which had grown out of their belief in the object being a shield only, vanished. And thereby hangs a moral. In the existing state of medical education it is evidently impossible for all physicians to be thoroughly versed in the literature of any branch of the profession. There will, therefore, always be a large percentage of practitioners

* Manual, page 329.

† Hand-book, page 198.

‡ System. First American edition, page 654.

§ American Journal of Medical Sciences, April, 1874.

of average capability and attainments who will be forced to adopt, for the first years of their practice, a more or less routine system, based on dogmatic assertions in manuals and hand-books. To them a name stands for a definite idea, a disease is looked upon as a well-defined entity, and the mere mention of a disease is accompanied by the mental outline of a particular line of treatment; such a disease is to be treated in such a manner and with such remedies. Shall they continue to treat alike peritonitis, septicæmia, and all the diseases which may coincidently befall a woman in child-bed? Is it not merely because veterans and teachers are too indolent to change a name which to them, indeed, has lost its original meaning, but which clings with the tenacity of bad habits generally? Words may be as deadly as things. Truly this word has slain its thousands.

ART. II.—*Remarks on Colles's Fracture.* BY FRANK HASTINGS HAMILTON, M.D., of New York. Made at a Meeting of the Yonkers Medical Society. Reported by F. S. Grant, M.D., Secretary of the Society.

At a stated meeting of the Yonkers Medical Association, held in Yonkers, November 3, 1876, Dr. Frank H. Hamilton made the following remarks on Colles's fracture:

Our knowledge of Colles's Fracture is comparatively recent. In the first part of the present century Mr. Colles, the eminent Dublin surgeon, was the first to give a comprehensive description of the fracture which took his name. He did not, however, describe it altogether accurately; he erred in stating that the fracture always occurred two inches above the wrist joint, and it was reserved for later surgeons to prove that in Colles's fracture the break rarely exceeded from one-half to three-fourths of an inch above the articulations. At first it was supposed to be a simple transverse fracture.

Dr. Hamilton then first spoke of what he called the *classi-*

cal Colles's fracture, which was from one-half to three-fourths of an inch above the articulation, and nearly transverse. It occurs from slight falls, as the weight of the body, the hand being expanded and open, receiving the force of the fall. It is sometimes called "back-door fracture," "silver-fork fracture," a rather fanciful and *Fifth avenue* name, the doctor thought. The classical fracture is very common during the winter, a slip on the side-walk being often the cause. It is rare in childhood.

The lower fragment is tilted backward, but not entirely displaced or impacted; indeed, not ordinarily impacted. This is the common form, and is reduced by *pushing it back*, which, as a rule, is easily done.

Second. A fracture where there was distinct impaction, as well as a tilting backward, the main shaft being driven into the cancellated tissue, and the patient having fallen from a height.

Third. What Dr. Van Buren calls a classical fracture, viz., a transverse fracture, with comminution of the lower fragment. Dr. Hamilton thought all such fractures were caused by falls from a height; and, therefore, could not be classical; for in the great majority of cases classical fracture is a simple transverse break from a fall on the side-walk.

Fourth. Dr. E. M. Moore, of Rochester, says that in addition to transverse fracture, there is a rupture of the triangular fibro-cartilage and internal lateral ligament, and a dislocation of the ulna. Dr. Hamilton said that if this does happen it was only an occasional form.

Fifth. A form of fracture which was called Barton's, described by Dr. Barton, of Philadelphia, before he had seen Colles's fracture, described as a fracture of the lower end of the radius, with the posterior and lower margin *chipped off*. Such a fracture Dr. Hamilton thought possible; but it could not be distinguished from Colles's, and would be considered as such now-a-days.

Treatment.—1st. The classical fracture. The easiest to reduce of all fractures, accomplished either by the band alone, or assisted by laying across the knee. If not thus reduced, you may depend it is not classical. When once put in position it is easily retained. Very often this fracture will fall back itself by the mere weight of the flexed hand.

2d. The impacted form. In the great majority of cases easy to reduce. A little more force is required with extension, and Dr. Hamilton thought that the error in treating a Colles fracture was often from not using *force* enough; bring forward until it seems bent, if any thing, a little in the opposite direction. If this plan were always carried out fewer cases of deformity would result.

3d. The comminuted. Not always easily recognized. There is sensible deformity. The treatment differs in no wise from that of the impacted.

4th. Moore's fracture. Dr. Moore, after stating "that all difficulty in treatment disappears when the luxation is restored," gives the following method for reduction: 1st, extend; 2d, incline hand to radial side; 3d, push the head backward; 4th, keeping backward, while extending swing, well to ulna side, and *flex* the hand. Dr. Moore furthermore states that the diagnosis of luxation is made out by the relation of the head of the ulna to the tendon of the extensor carpi ulnaris. The manouver mentioned restores the head of the ulna, with the tendon in its normal position.

Dr. Hamilton then said that in regard to *all* of the forms which he had mentioned, when once reduced they should be kept in place by the simplest means. As to the expedient of *forced adduction*, which was often spoken of, but not really used, Dr. Hamilton thought should never be practiced as a means of treatment; it was not only useless, but actually painful, even in the normal wrist. The pistol-shaped splints, which seemed to have this idea in view, only threw up the radius a little better in view. He does not use them himself.

Dr. Hamilton now proceeded to state to the Society, and to illustrate to them, what he considered the essential points of a splint for Colles's Fracture.

First, you want a comfortable splint, for you must remember that here you have an articulation surrounded by tendons, two arteries, and three nerves, so that any undue pressure brought to bear here might and has proved dangerous.

After exhibiting a number of splints, among others *Day's splint*, which he said was not likely to fit, was uncomfortable and likely to cause ulceration. *Martin's splint*, which does not fit either, and is expensive. The doctor illustrated his own method, as follows: Take a flat piece of board, shave off upper edge to conform to the slight bend of the hand, lay cotton batting on one surface and cover with cloth. If it does not adjust itself to the contour of the wrist and palmar surface, punch a hole in the pad with the blade of a knife, and push away the batting so as to have a space over the lower fragment. The pad must rest only on the *upper* fragment. You have now a perfectly fitting, safe, and comfortable splint. Placing it in position, on the anterior surface, you proceed to apply the roller bandage smoothly and firmly, which pushes the lower fragment into position and maintains it there. More than this, the open space on the splint preserves from pressure the ulnar and radial arteries and the median nerve. Gangrene is prevented, which is not infrequent in the treatment of this fracture.

Dr. Hamilton very rarely uses a dorsal splint, because it is not essential, unless the patient be unusually fractious.

Future Management.—At the end of ten or twelve days Dr. Hamilton advises the removal of the splint, and the employment of motion at the articulation. Union here takes place at an earlier period than any other fracture in the body, and it is more necessary, for there is a greater tendency at this site to ankylosis than elsewhere, so abundant are the synovial sheaths.

In conclusion, the doctor wished to call the attention of the Society to a deformity which sometimes occurred at the end of two months, and which does not remain at the end of a year. It was a swelling above and below the annular ligament, with a thickening of the ligament over the carpal bones.

This swelling is limited, and over the carpal bones is quite hard. The ulnar is always somewhat loosened by a yielding of the ligaments attaching the ulnar to the radius, and this you can not overcome.

ART. III.—*On the Pathology of Partial Cerebral Anæmia.* By JOHN C. PETERS, M.D., President of the Medical Society of the County of New York, and of the New York Neurological Society; Vice-President of the New York Public Health Association.

One or more arteries of the brain may be obstructed or obliterated, and anæmia of those parts supplied by it produced, through the action either of thrombosis or embolism.

Thrombosis, as is well known, arises from a coagulation of the blood within the vessels during life, owing either to changes in the walls of the vessel itself, or to impeded blood flow. The coagulation is called a thrombus.

Thrombosis of the arteries may be produced by inflammation, or atheroma, or simple loss of vitality of their walls, or by dilatation or fatty degeneration of the heart, and by alterations of the blood, either excess of fibrin, or certain other conditions of it, occurring in ill-nourished and cachectic persons.

Thrombosis of the cerebral veins and sinuses may be caused by inflammation of the dura mater, cranial bones, and pericranium, or by unknown changes in the quality of the blood.

Fatty and calcific degeneration may affect the walls of a group of capillaries to such a degree as to interfere with the

nutrition of portions of the brain and lead to anæmia of them.

Thrombosis in the cerebral capillaries may also arise from disease or loss of vitality of the endothelium; for, even in the normal state, all the external portions of the blood currents, as they flow, adhere to the walls of the capillaries almost without motion, so that this layer of blood is almost passive, while the cerebral column alone moves decidedly, drawing with it the globular elements of the blood, especially the red globules; while the white globules, which are extremely viscous, are easily caught and arrested in the passive layer, which always lies against the endothelium of the capillaries. Among the more or less well-defined causes influencing the coagulation of the blood, the least disputed, though the one most difficult to explain, is the influence of the inner coat of the living vessels. This influence was first pointed out by Brücke. Contact with the normal *living* coat is a powerful obstacle to coagulation; the fibrin can not become solid while the blood is circulating well and each of its particles comes constantly in contact with the living internal coat. As soon as this becomes enfeebled, or loses its vitality, the blood coagulates in the affected capillaries. [Küss.]

The act of coagulation depends upon a separation of fibrin from the blood. This is a complex process, for fibrin is not contained in the blood as such, but only formed in the act of coagulation. A. Schmidt has established the interesting fact that in the blood corpuscles is contained an albuminoid substance, called globulin, or fibrino-plastic substance, which enters into a firm union with a similar fibrinogenous substance contained in the serum, or liquor sanguinis, when the hindrances to coagulation are removed, or especially if the conditions facilitating coagulation are produced, as they are in disease or loss of vitality of the endothelium. It is the firm union of these two substances which we call fibrin.

Again, when by the process of chronic inflammation, or atheroma, the inner surface of an arterial wall becomes rough, it acts upon the blood contained in the vessel as an obstructing foreign body, and the loss of vitality of the endothelium allows coagulation. When they occur primarily, inflammatory processes, both in the arteries and veins, generally have their seat either in the external or middle coat, or, more rarely, in the deeper layers of the internal coat. They never commence on the real internal surface of the lining membrane of the vessels, which only becomes involved secondarily. The vitality of the inner vascular coat, or intima, becomes impaired as the result of inflammatory process, just as the walls of the chest and intestines become paralyzed by inflammation, and when this has occurred it acts as a strange or foreign body, and there is a tendency for the blood to coagulate upon its surface. In other and better known cases the lining membrane is completely destroyed, and the subjacent diseased tissues of the arteries come in contact with the circulating blood, and in the same way cause the formation of a coagulation, or thrombus. Such inflammatory changes occur in the arteries, constituting the condition known as atheroma, which, in the smaller vessels, may be a cause of thrombosis.

Atheroma is generally supposed to arise from inflammation of the walls of the arteries, commencing in the deeper layers of the inner coat. In the earliest stages the fibrous and elastic lamellæ of the inner arterial coat become infiltrated with young cells, which are partly emigrant and partly derived from the proliferation of the cells of these structures. As these young cells increase in number, they give rise to a swelling beneath the innermost layers of the internal coat of the artery. This swelling of the intima presents a very characteristic appearance; it is of a soft, flabby consistence in the earlier stages, and the lining membrane, which is continuous over it, can be readily stripped off, leaving the

diseased tissue beneath. It thus contrasts strongly with the superficial patches of fatty degeneration which result from the passive metamorphosis of the superficial epithelial and connective tissue cells of the arteries.

Dr. Francis Delafield also states that atheroma commences as an endarteritis, or chronic inflammation of the outer layer of the inner coat of the arteries, and is marked, at first, by small flattened elevations on the inner surface of the vessels, formed by a hyperplasia of the outer layers of the inner coat, where we find a considerable number of round, fusiform, and stellate cells, mixed with a basement substance which may be hard and fibrous, or soft and mucous.

When the lesion has reached this stage, it goes on to fatty or calcific degeneration. Fatty degeneration attacks both the new cells and basement substance, converting them into a dense, yellow, cheesy mass, or into a semi-fluid, yellow puriform substance. Instead of cells and basement substance, we now find fatty and broken cells, granules, and cholesterine. This is the condition generally called atheroma. The softening process advances towards the inner surface of the intima which covers the atheromatous patch, while a small perforation is formed, and finally ulceration of the internal coat ensues. On the roughened surface thus produced, the fibrin of the blood is often deposited, causing obstruction of the artery and anæmia of that part of the brain which it supplies with blood. All the stages of simple hyperplasia, fatty and calcific degeneration, are often met with in the same vessel.

It seems strange that inflammation of the free surface of the internal coat of the arteries should not occur as often as it frequently does in the corresponding tissue of the endocardium. In fact, Bizot has described an acute inflammation of the arteries, in which an albuminous exudation of greater or less thickness, of the consistency of jelly, transparent, smooth, and sometimes rose-colored, at others colorless, covers

the lining membrane. It is occasionally so transparent as to escape attention. It occurs in patches, solitary or numerous, and diminishes the caliber of the vessel. Bizot saw it entirely plugging up the anterior tibial artery, and saw this exudation formed at the orifices of the arteries arising from the arch of the aorta, and at the mouths of the cœliac, mesenteric, and renal arteries, and also blocking up the mouths of the intercostals. As late as 1873, MM. Cornil and Ranvier described endarteritis in nearly similar terms, and exudations in great part composed of round embryonic cells from the proliferation of the normal elements of the internal coats, which was most active near the surface. They insist that this is peculiar to acute, genuine endarteritis, and distinguishes it from chronic atheromatous endarteritis, where the same changes go on in the deep layer of the internal coat.

Anyloid degeneration of the arteries is of common occurrence. The inner coat and muscular layer then become infiltrated with a translucent material looking like wax. In extreme cases the outer coat is infiltrated in the same way. The walls of the arteries appear thickened, stiff, and of a peculiar waxy color, and may be stained mahogany red by the addition of a weak solution of iodine. The lumen of the affected vessel is diminished in size, and anæmia of the part is produced.

The symptoms of partial cerebral anæmia are: Headache, generally near the situation of the obstructed artery, and more remarkable for its persistency than severity; speech is apt to be involved, not only as regards the articulation, but the memory of words, somewhat resembling aphasia; vertigo is common; the signs of paralysis soon make their appearance, both as regards mobility and sensibility; the memory is apt to be impaired, especially about recent events. Recovery may take place when the collateral circulation is established about the region supplied by the ob-

structed artery, but more frequently circumscribed softening of the brain occurs, with its usual symptoms.

If atheroma always arose from simple inflammation of the walls of the arteries, it might be possible to treat it with arterial sedatives like aconite, digitalis, colchicum, etc.; but as it most frequently occurs in old age, it is, at times at least, a degenerative change, for which the phosphates may be useful. When of syphilitic origin in younger persons, corrosive sublimate, in bark, or iodide of potash may be thought of; when arising from intemperance and chronic alcoholism, the alkalies are useful.

ART. IV.—*On Reflex Irritations Throughout the Genito-Urinary Tract, resulting from Contraction of the Urethra at or near the Meatus Urinarius, Congenital or Acquired.* By FESSENDEN N. OTIS, M.D., Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York. Read before the New York Academy of Medicine.

MR. PRESIDENT AND FELLOWS OF THE ACADEMY: The influence of the irritation of peripheral nerves in producing centric disturbance in the spinal cord, which may thence be transmitted to distant parts of the animal economy (first claimed by Dr. Marshall Hall more than twenty years ago), has found corroboration in the testimony of every medical scientist since his time; and besides, so much clinical proof has been accumulated by the medical profession at large in support of this proposition that it is no longer a matter for discussion. Morbid reflex disturbances are now accepted as occupying an important place in the recital of human suffering.

Varied and grave disturbances, influencing the entire nervous system, are often ascertained to be dependent upon as apparently significant a cause as a decayed tooth, an indigestion, a simple erosion upon the cervix uteri, ceasing at once on the cessation of the cause. Dr. D. Campbell Black, of Glasgow, in his very interesting and valuable work on the

renal and urinary organs, cites cases of retention of urine from reflex irritation, the result of an operation for hæmorrhoids. Trousseau has recorded cases of incontinence of urine dependent solely upon the irritation caused by a preputial contraction. Dr. Sigismund Waterman, of New York, has shown me a case of this sort which was promptly relieved by division of the prepuce. I have seen other similar cases, and also one marked case of *retention* of urine in an infant nine months old, which, after lasting four days, was completely relieved within one hour by slitting up the prepuce. Seminal emissions are well known to occur as a result of phymosis, relief occurring promptly on ablation of the prepuce.

Dittel relates a case where a man twenty-six years of age had a slight phymosis, and was the subject of incomplete erections, nocturnal emissions, frequent desire to urinate, and also of many hypochondriac symptoms, all of which were promptly and completely cured by removal of the prepuce.

A similar case is related by Pitha. Sweigger-Seidel cites a case where the simple introduction of a catheter caused complete syncope, and yet no urethral disease was present. I have the record of a similar case where complete unconsciousness instantly followed the introduction of a bulbous sound through the meatus urinarius. Every surgeon of much experience has recognized the tendency to syncope in a considerable proportion of nervous patients, on the first introduction of instruments through the meatus.

Spasm of the bladder is noted by Dr. D. C. Black as occurring from sympathetic irritation, and to such a degree that complete closure of the *uretral* orifices results, producing retention of urine in the ureters and pelvis of the kidney. Such a case I believe I have seen, resulting in death from uræmia, and caused by the rude introduction, by the patient, of a catheter, through a narrow stricture at the posterior

border of the fossa navicularis. Forceible and painful contraction of the bladder followed immediately, with complete suppression of urine. The patient died uræmic twenty-four hours after. The bladder was found empty (with the exception of a few drams of grumous blood and mucous), closely contracted and free from disease. The ureters were normal, the kidneys highly engorged with blood, but presenting no evidence of disease. The case was accepted as one of *acute suppression* at the time. The ureters are known to contract vigorously under the influence of the galvanic current. The above case,* it now seems to me, was one of spasm of the ureters and bladder, reflected from the irritation of the end of the penis.

A few days since Dr. Brown-Sequard related to me the following case :

"While in London, during the past year, a gentleman was brought to me who presented all the rational signs of advanced cerebral *ramollissement*. I had looked upon the case as quite a hopeless one, until noticing that the patient frequently applied his hand, in an absent sort of way, to his genital apparatus. Permission being accorded, examination of the parts revealed an aggravated inflammatory phymosis, complicated with acute balanitis. On making this discovery," said Dr. Brown-Sequard, "I expressed to the medical gentleman accompanying and in charge of the patient my belief of the possibility that the *apparent* ramollissement might be due to reflex irritation, caused by the evidently chronic and severe irritation of the glans penis. I advised complete division or ablation of the prepuce, and treatment of the balanitis, as the best and only hope for the patient's recovery from the brain trouble from which he was suffering."

The operation was performed, and the effect upon the men-

* Reported to the New York Pathological Society, March, 1872.

tal and physical condition of the patient was almost immediate. "So rapid was his recovery," said Dr. Brown-Sequard, "that within six weeks from the date of the operation he presented himself at my office perfectly well in every respect."

Dr. Sayre, of New York, in the Transactions of the American Medical Association for 1870, has reported several interesting cases of partial paralysis of the lower extremities, associated and evidently dependent upon adherent and contracted prepuce. One was of a boy five years of age, unable to walk without assistance, or to stand erect—his knees being flexed at an angle of forty-five degrees. The operation of circumcision was performed on this lad by Dr. Sayre, and "from the very day of the operation the child began to improve," and without other treatment made a rapid and complete recovery. In a second case, a lad of fourteen years had been under treatment for paralysis of his legs for several months without marked improvement, when it was found that a contracted and adherent prepuce was present, causing great local irritation, dysuria, and painful erections. The preputial contraction was recognized as a possible important factor in causing the paralytic trouble. Circumcision was performed, resulting in complete recovery from the paralysis in six weeks.

Sir Henry Thompson says:* "I have given complete relief to distressing symptoms of very long continuance, *the cause of which was not suspected*, by dividing an external meatus, which, nevertheless, admitted a No. 6 English catheter. I have met," he further states, "with three marked examples of a similar kind, in which the very simple operation necessary was followed by *complete disappearance of urinary difficulties, which had been long regarded as of an extremely obscure character.*"† He cites a single case: "J. J., aged thirty-four, a gentleman

* Stricture of the Urethra, second edition, page 249.

† Page 253, op. cit.

whom I had visited at the request of his medical attendant, in the spring of 1857, had been suffering from painful, prolonged, and frequent micturition for five years previous. He was compelled to pass water from three to five times every night, and every two hours during the day; experienced severe pains in the back and loins, and general ill health. Urine was purulent, foetid, alkaline; results of habitual retention and partial engorgement of the bladder. He had been treated for renal disease without any good effect. On examination I found a simple narrowing of the urethral orifice, and marks of previous ulceration in a small cicatrix. I learned," says he, "that he had had chancre seven years before, which involved a large portion of the meatus, after the healing of which his present symptoms almost imperceptibly appeared. A probe only passed through the opening. I divided the contraction so as to make a free opening. A No. 10 catheter was passed easily into the bladder, demonstrating that there was no other obstruction, and twelve ounces of urine were drawn off, although he had passed water just before. The relief was almost instantaneous—in a week it was complete. He has had perfect immunity from his urinary complaints ever since.

By the cases already cited, and many others scattered through the periodical literature of the past few years, it is sufficiently proved that paresis, more or less pronounced, may result from irritations reflected through peripheral nerves, without any coincident morbid change in the structure of the spinal cord, and that incontinence of urine, retention of urine, suppression of urine, involuntary seminal emissions, may, in the same manner, result from irritation at the *extremity of the glans penis*. The case of simulated cerebral *ramollissement*, related by Brown-Sequard, occurring as a direct sequence of like irritation, indicates the wide range of sympathetic disturbances which may be initiated by simple inflammatory action at this point. Now, aside from the fact that the glans penis

is known to be extraordinarily rich in sympathetic nerve cells, that it is the recognized initial point from which the physiological sexual excitement is transmitted throughout the male genitalia, the records of clinical experience abound with evidences of the capacity and proneness of this especial region to produce reflex disturbances, often of a grave and lasting character, throughout the entire nervous system. Notwithstanding these facts, I believe that the full significance of this locality as a source of reflex irritations along the genito-urinary tract has not yet been appreciated; and, further, I am convinced that many heretofore obscure difficulties and diseases of the genito-urinary organs may be distinctly traced to the locality of the meatus urinarius as the source of their initiation and continuance. In pursuance of this idea, permit me, gentlemen, to present for your consideration the following cases:

CASE 1.—A. Y., physician, aged twenty-eight, contracted first gonorrhœa November 20, 1873. Severe—lasted four weeks; treatment by alkalies, internally; continued application of cold, mild injections. Was under my care. I noticed, on examination, that his penis was large and the meatus small, and called patient's attention to this fact when he first presented for advice, and assured him if he did not have a fair recovery it would be necessary to enlarge the meatus.

January 19. Patient presents, with gleety discharge without known cause, great irritation at the neck of the bladder, and frequent desire to urinate; is certain that his former disease was imperfectly cured, and that it has come forward from the deep urethra to which it had extended in his original clap. I reminded him of his contracted meatus; he is certain he needs deep injections, but submits to operation for enlargement of meatus. Cut it to 30f, after which 30f bulb passes throughout the canal with ease: to keep the incision open until healing is complete.

January 24. Patient reports immediate cessation of irritation in the perineal portion of the urethra on division of the contraction. The discharge ceased within forty-eight hours, and he has had no trouble since.

CASE 2.—September 10, 1872, Mr. W., a Swede silk-weaver, was brought to me by his medical attendant, complaining of pain and general discomfort about the perineum, and especially of a nervous uneasiness in that region and in the glans penis, which prevented him from pursuing his avocation; he could not sit still. Had had a gonorrhœa several years previous. Had been treated for stricture by dilatation for several months, but without relief. Examination showed a narrow meatus, No. 20f. Stricture at two and a half inches, defined by 18f. A free division of the meatus was made with Civiale's *bistourie cache*, and of the stricture with the dilating urethrotome; 27f passed readily through: to be kept open by daily introduction of sound until healed.

September 20. Patient reports entire cessation of the irritation and nervous feeling immediately following the operation, but this returned yesterday. Examination shows recontraction of the meatus to 20. Cut again freely.

November 16. Patient again called, with the statement that he had been able to work until the day previous, when the irritation again returned, and he desired to be cut again. Examination showed a recontraction at the meatus to 24. Cut again, and introduced 30f, which passed easily through the site of stricture at two and a half inches, and down to the bulbo-membranous junction. This patient called two months after (January 20), and had had no return of his trouble—no recontraction of meatus.

CASE 3.—Mr. W., aged twenty-seven, had gonorrhœa in 1870, lasting one month, when a fresh exposure resulted in another attack, which lasted, under a sharp fire of injections, for six months longer. Since that time has always had a return of the discharge after connection. Has been under

treatment for stricture by several physicians, but none succeeded in entering the bladder. His last medical attendant, after treating him for a couple of months, said that he had no instruments small enough to pass, and advised him to put himself under my care. Examination (April 16) showed organs unusually well developed, meatus contracted to 24f, and red and pouting, and bathed in a muco-purulent discharge. Twenty-four sound is arrested at five inches; only fine filiform will pass, and that is closely hugged.

April 19. Pass filiform with ease, follow with No. 10, and then, with some effort, with No. 16f; after this the filiform is again closely hugged in the membranous portion; divided the meatus freely, and introduced No. 30 steel sound, which passed literally by its own weight down through into the bladder, thus proving not only the spasmodic character of the deep obstruction in this case, but its entire dependence upon irritation caused by the stricture at the meatus.

CASE 4.—October 30, 1873. J. W., aged thirty-two, had gonorrhœa ten years ago, very severely, lasting, with pain and difficulty of micturition, fully six months. After being apparently well for three years, a gleety discharge appeared without new exposure. Masturbated daily from fourteen years of age to twenty, when he abandoned the habit. At twenty-six began to have nocturnal emissions, which, growing gradually more frequent since the last two years, have occurred almost nightly. He has had occasional sexual intercourse. Erections have been imperfect for last eighteen months, ejaculation taking place before the erection was complete. He has suffered much from despondency and nervousness. Has had no treatment except for general health, which much of the time has been indifferent. Examination shows genitals well developed and apparently normal, with the exception that while the circumference of the flaccid penis is three inches, the meatus is contracted to 22f (the size of

urethra in a penis three inches in circumference is, as a rule, fully 30f).* See note.

November 1. Divided meatus thoroughly, and passed 31 bulbous sound readily through contraction.

November 11. Has had no emission since date of operation.

December 1. Found himself getting so much better in spirits and feelings generally, that he ventured to marry on the 25th. Since that time has had no trouble of any sort. *Considers himself a well man.*

CASE 5.—Mr. W., aged twenty-five, came under my care December 1, 1872. Contracted first gonorrhœa early in June, 1872. Was treated by the use of injections locally, and alkalis internally, until August 1, during which time he had no freedom from the discharge nor from acute suffering. About this time the vesical neck became involved, and he suffered much from frequent painful micturition. Came then under the care of a skilled endoscopist, who discovered numerous spots of granulations in the course of the canal, extending quite into the prostatic portion, and applications of a strong solution of nitrate of silver were made through the endoscope, which gave temporary relief; urination still painful every hour.

By September 1, after the use of pencils of tannin and glycerine, discharge decreased to a slight mucous. A spell of damp weather brought back the purulent discharge, with return of perineal pain and frequency of micturition. Tan-

NOTE.—I have recently operated for congenital contraction of the meatus in a child ten years old, where the circumference was two inches. After the operation 22f was passed easily through the urethra.

* $3\frac{1}{4}$ inches indicates urethral caliber 32f.

$3\frac{1}{2}$ " " " " 34f.

$3\frac{3}{4}$ " " " " 36f.

4 " " " " 38f.

$4\frac{1}{2}$ " " " " 40f.

nin pencils again used, but after continuing for four weeks, and no improvement, patient was put to bed, and hot hip-baths every two hours, etc.

After five weeks of this treatment, and various other, local and general, he came from his bed to me, December 1, 1872. On examination I found no difficulty in introducing No. 20^f bulbous sound, and discovered a firm cartilaginous stricture, extending from just within the meatus one-half inch back. This I cut freely with Civiale. Immediately following the operation, he expressed himself as feeling "like a new man." In his written report of the case (he was a physician), he stated that "on the division of the stricture the relief *was wonderful*." The discharge ceased within twenty-four hours, the perineal pain and frequency of micturition, and the ardor urinæ also ceased, and he returned to his duties, which were most active, on the following day (after having been laid up for over five months), and has continued on duty up to the present date, although he still suffers occasionally from prostatic pain. The prostate, which I found double its normal dimensions on his first visit, is now found to be reduced in size fully one-third.

CASE 6.—Mr. B., aged forty, from early boyhood has had more or less irritation of the urethra, usually referred to the vicinity of the meatus urinarius. Twelve years since he had an attack of gonorrhœa, which continued for nearly a year, in spite of a variety of treatment. Suffered much during this attack, especially with pain in the glans penis. After a continence of several months, on having sexual intercourse, found the act of seminal emission was accompanied by an intense burning pain, extending through the perineum and lasting for half an hour, described like red-hot lava running over a raw surface. On subsequent similar occasions, finding the same result, his physician, being consulted, called it a sexual weakness, and treated him by introduction of bougies. This failing to afford relief, he

eschewed sexual indulgence entirely. Occasional nocturnal emissions were accompanied and followed by the same pain previously referred to, but less severe than in connection. In June, 1873, after seven years of continence, he noticed a slight gleety discharge from his urethra, with pain in the glans penis, aggravated by motion, walking or riding. After a variety of opinions by various surgeons, as to the nature of his complaint, it was finally decided to be a stricture of the urethra, and was treated by the semi-weekly introduction of bougies. His stricture was supposed to be in the deep portion of the canal, and after six months of treatment his urethra was said to have been raised in calibre from 8 to 11 E. He then had an attack of acute cystitis, lasting two or three weeks, and since that time he has been subject to frequent trouble in micturition, frequency, and pain along the urethra, especially at the glans penis, and "*a feeling of wetness,*" as the patient describes it, "*that is depreseing in the extreme.*" He also had weekly seminal emissions. Examination in this case showed full development of penis. 26f defined stricture one-third of an inch from the meatus. Examination of bladder fails to detect any calculus. No evidence of contraction at any other point in the urethra with No. 21f bulb. I divided the stricture at the meatus, and passed 30f solid steel sound, *easily drawn through the urethra and into the bladder.* This was in July, 1873. The operation was followed by immediate relief from pain and frequency of micturition. The discharge soon ceased, a gradual improvement took place in regard to the pain after emission, for several months, when it began to return, and also some of his vesical irritation. Examination revealed a recontraction of the stricture. This was again divided, and a few days ago the patient wrote me that he has done well since the last operation (which was performed in November), and is entirely relieved of all his most troublesome difficulties, but an occasional feeling of irritation in the perineal region induces him to think that slight recontraction may have again recurred,

and he proposed to return, at some convenient time, for examination upon this point.

CASE 7.—Mr. S., aged forty-five, has had gonorrhœa twice, followed each time by a gleet lasting many months, finally cured by introduction of steel sounds. Has had several attacks of irritability of the bladder since first attack of gonorrhœa, and long ago noticed that this was affected by the use of any alcoholic stimulant, and also that he did not completely empty his urethra after micturition. To effect this, he was in the habit of pressing his finger along the urethra from the perineum; unless he did this, a sense of irritation in the canal, and a desire to urinate, would come on in a few moments. Complained of feebleness in making water after a week or two of continence. On having connection, the stream is at once greatly improved. Any sexual excess is followed by pain in the perineum. His trouble was now thought to depend upon spasmodic stricture, and large sounds advised. In order to admit them it became necessary to incise the meatus. This done, 18E. was easily introduced, but not continued as contemplated, as all trouble passed off in a few days. A few months subsequently, however, his old troubles returned, and were not relieved by the use of the sound. At this point he came under my care. Penis found to be four inches in circumference, which would indicate a capacity of urethra of 38 of the French scale. No. 28 bulbous sound detects contraction at the meatus. This was freely divided, with the immediate result of relieving the irritation of the bladder, and in a short time pain following connection had almost entirely disappeared, and the stream of urine was increased in force, and the ability to empty the canal much improved. The patient is still under observation.

CASE 8.—Mr. Z., aged forty-six. Regular and chaste in habits until going to China, twenty years since. Following the custom of foreigners in that country, he indulged excessively in sexual intercourse for several years. Had a

single attack of gonorrhœa, from which he recovered completely in a few weeks. For the last few months he has been troubled with involuntary emissions as frequently as once a week, and, latterly, in his attempts at sexual intercourse he has failed, on account of the seminal discharge having occurred before the erection was complete. He feels quite certain that his genital apparatus is less in size than formerly. Examination shows pénis of normal size, three inches in circumference and three in length; some enlargement of the left spermatic veins; testes soft, full size, left largest; meatus urinarius contracted to 22f. On introduction of the bulbous sound through it, as it was quite unyielding, it required some slight pressure, and as it suddenly slipped into the fossa navicularis, a regular spasmodic retraction of the penis occurred at intervals of three or four seconds (retraction about a quarter inch), and continuing during the half minute that the instrument was retained, and continuing with rhythmical regularity for three or four minutes after its withdrawal. This result of the introduction of the sound was repeated several times at that sitting, the intervals between the contractions gradually lengthening, until an interval of five or six seconds occurred, when it ceased. These movements, so evidently of reflex origin, suggested the dependence of his seminal troubles on the same cause. I therefore divided the meatus thoroughly, and introduced thirty-one sound without difficulty through the urethra. After the operation, the introduction of the thirty-one bulb failed to excite the spasmodic contraction of the penis, nor in frequent subsequent experiments was I able to reproduce this phenomenon. An immediate improvement in the general condition of the patient occurred. His involuntary emissions ceased without other treatment, and six weeks after the operation he informed me that he had entirely recovered his sexual powers.

CASE 9.—I. W., aged thirty-four, came to me in September, 1873, complaining of frequent seminal emissions, one or

two every week, pains in the lower part of the back, in the hypogastric region, in the groins, running into the testicles and extending down the inner aspect of the thighs to the knees. He was of chaste habits up to some four or five months previous, when he became engaged to be married. After this time he was the subject of frequent and prolonged venereal excitement and ungratified desire. In a few weeks involuntary emissions became frequent and finally painful, with suffering for some time after. Gradually the previously described pains of the back, hypogastrium, groins, testicles, etc., came on, resisting all treatment by his family physician until the present time. I prescribed for him absolute abstinence from sexual contact, general care of diet, position in sleep, cold ablutions, etc., and a mixture of bromide of potassium with the bromide of ammonium and tincture of ergot. December 3, three months after (living several hundred miles distant), he came again to see me, with the report of an entire relief from the seminal emissions, but had had swelling of testicles, and still suffers from almost constant pain in the back, over pubes, in the groins, and, especially of late, in the testicles, extending down the thighs. Examination revealed a serous effusion into the *tunica vaginalis* of of both sides; in the left some three or four drams of fluid; in the right rather more, and which backed well up to the external abdominal ring. The light test showed this fluid to be quite transparent. I at first thought of treating it as an ordinary hydrocele, by withdrawing the fluid; but on finding a meatus, situated on the superior aspect of the glans, contracted to 15f, and holding the bulb for fully one-third of an inch, and further finding that he had long been troubled with dribbling after micturition, I explained to the patient the possibility of all his trouble arising from this congenital deformity. He promptly consented to an operation, and I divided the contraction thoroughly, passing afterwards a thirty-four steel sound through the urethra.

(Circumference of penis three and a half inches.) Several sensitive points were recognized by the patient during the passage of the sound, indicating a granular condition of the mucous membrane. Immediate relief of the pain in the testicles and down the thighs followed the operation. Within a month all trace of fluid in the *tunica vaginalis* had disappeared; he had had a single nocturnal emission without pain, and with the exception of a feeling of nervous anxiety through the hypogastrium (which came on occasionally), and some pain in his back, after general fatigue, he was quite recovered from his troubles. No internal remedies were made use of subsequent to the operation.

CASE 10.—Mr. De F., aged forty-three, came under my care in March, 1867, suffering from retention of urine following a debauch. As no great amount of urine was present in the bladder, I gave him *mur. tr. ferri*, advised a hot bath, and left him. On the following morning he expressed himself free from any trouble, and declined an examination of the condition of his urethra. In December, 1871, he again presented, complaining of incontinence of urine. He was also suffering from intermittent fever (which I suspected was due to his urinary trouble.) Said he “made his water freely, but could not hold it.” I found some accumulation in the bladder. As the patient lived out of town, I made no examination, but advised him to make arrangements to come in town on the following day for treatment.

He did not present again until November 30, 1872, when he came with the statement that he had then lost all control of his urine, had had none for the past year. On the day previous, while riding, he noticed a swelling in the perineum, and “wished it looked after.” Examination revealed a firm elevation on the left of the raphé, one and a half inches in diameter at the base, and about an inch in elevation, extending from just behind the anterior border of the anus to the junction of the scrotum with the perineum; solid, resi-

lient, and painless; no constitutional disturbance; temperature, $98\frac{1}{2}^{\circ}$. On examination of the urethra, expecting to find a deep, tight stricture. I was surprised to find myself able to pass No. 13f catheter into the bladder, and to draw off a full pint of fetid urine, although he had just urinated. During the day the swelling increased, and interfered with the calibre of the urethra, so that I could only pass a No. 1 catheter into the bladder, and that with difficulty. Attaching this to Dienlafoy's aspirator, I drew off a pint and a half of urine. This, on examination, was found to be free from any evidence of organic disease of the kidney.

I then incised the tumor down through the superficial perineal fascia, and gave exit to a thin layer of pus, in quantity about a drachm.

It was only on the fourteenth day after (the swelling gradually subsiding) that urine was found flowing through the wound. In the mean time, the patient suffering from cystitis, his bladder was washed out with a double-channeled catheter, No. 20f, which was passed without difficulty, although a perceptible clinging was recognized near the meatus—his bladder trouble increasing so that he made his water every hour, and was loaded with pus. I urged an operation on the stricture, which, from the easy passage of the catheter, I had not before considered of much importance. Introducing bulbous sound No. 20f, I could not detect any stricture; on its withdrawal it was arrested at a point half an inch from the meatus, incising the stricture with the dilating urethrotome, which (No. 23f) I introduced with some difficulty; I then passed No. 30 sound, without obstruction, down into the bladder. On the following day I found that the frequency of evacuation of the urine had decreased from *one* hour to *six* between the acts; that the purulence had decreased, and that much less urine flowed through the opening in the perineum. From that time the patient continued to improve; his control of the flow of urine was restored; the

purulence gradually disappeared, and within a week his perineal incision had healed, and he left for his home apparently well, not having had any treatment whatever since the healing of the wound at the point of stricture. Circumference of penis in this case, three inches.

CASE 11 —February 12, 1872, Mr. A., aged fifty, came under my care, through the courtesy of a professional friend, with the statement that he had been suffering from chronic irritation of the bladder, accompanied by a slight urethral discharge, more or less troublesome, for a period of five years.

He was thought by his physicians to be the subject of "gravel," and for a long time had been much treated, and was finally sent abroad, in the hope that entire change of habit and climate might afford relief. He returned somewhat benefited. Soon after (about three months previous to his visit to me), subsequent to a season of prolonged exertion, physical and mental, acute irritation of the bladder recurred, with reëstablishment of the urethral discharge, the latter quite like gonorrhœa, and was treated as such, although he had lived in the odor of marital sanctity for more than twenty years. Anti-blennorrhagics were administered with no benefit. Injections afforded only temporary relief.

The patient presented to me in usual general health, digestion good. He gave a history of an attack of gonorrhœa twenty-five years previous, which was treated solely by internal remedies. A profuse muco-purulent discharge was present. On urination the stream was irregular and contracted. Meatus of average size, and admitted No. 18f bulbous sound; this was passed slowly and with some pain for half an inch, when it suddenly slipped into a capacious urethra beyond. On withdrawal, it was firmly held at half an inch from the meatus. On the same day I incised the stricture freely with Civiale's bistourie caché and passed No. 26f, and sent him home with directions to his professional attendant to have dilatation practiced daily until healing of the

wound was complete. Returning July 2d, he reported himself as having had entire relief from his bladder trouble, and from the discharge, since the healing of the incision. For a few days previously, however, he had suffered with some vesical irritation. Examination revealed some contraction still remaining on the site of the stricture; this I at once relieved by the use of the dilating urethrotome, and passed 30f down into the bladder.

CASE 12.—T. W., aged thirty-five, had gonorrhœa fifteen years ago; has had it several times since. The last time, four years ago, coming on forty-eight hours from date of exposure. After the discharge had existed ten or twelve days, he states that he "stopped it with a powerful quack injection." Three or four days subsequent to this he began to suffer with a neuralgic pain in the left testicle, the scrotum became tender and red, testicles moved up and down alternately much of the time, and the penis was greatly contracted; there was likewise pain in the groins, described as drawing and sickening, which extended down into his knees and the bottoms of his feet. This continued with varying severity almost without cessation up to February 22d, when he came to New York for treatment, and fell into the hands of an endoscopist, who discovered numerous granular spots deep in his urethra. Applications made at regular intervals for about three months without benefit. An application of carbolic acid to the scrotum gave some relief to his nervous feelings, but this caused vesication, and the relief was but temporary. About May 1st he sought the advice of a surgeon skilled in genito-urinary diseases. Slight stricture was discovered near the meatus, and several indurated points farther down. 28f solid steel sound was introduced, and after some repetition during one month was given to the patient to be regularly used once in three days until his trouble ceased.

Went back to his home, some eight hundred miles distant,

and pursued the plan laid out for him, but received no benefit. The motion of his testicles was almost constant, and the nervous feelings this induced drove him almost frantic—compared with it the pains in his groins, knees, and feet were a positive relief. He became very low-spirited and despondent. Early in October his physician (who had accidentally met with an article of mine in the second number of Dr. Brown-Sequard's Archives on "Reflex Irritations of the Genito-Urinary Apparatus, resulting from Stricture") advised him to return to New York and put himself under my care. Examination discovered a penis of normal size, three inches in circumference; scrotum greatly relaxed and covered with eczematous scales produced by the carbolic acid; testicles hanging very low. My attention was at once drawn by the patient to the rhythmical contraction of the cremaster muscles, through which a see-saw motion of the testicles was kept up, and which constituted his chief annoyance. 30f bulbous sound passed the meatus, but was arrested at one-half inch, a point to which his greatest sensitiveness, during passage of instruments, had always been referred. 28f passes through and detects another stricture at two inches, and still another at two and a half.

On Friday, October 17, at my invitation, the patient was examined by Dr. Coldham, of Toledo, Dr. J. DeForrest Woodruff and Dr. Frank Howe, of New York, especially in reference to the spasmodic action of the cremasters. This was very marked and constant, and continued until the patient was placed under the influence of ether by Dr. Howe. I then demonstrated the size and locality of the strictures before mentioned, and divided them in succession with the (my) large dilating urethrotome, after which I passed with ease a 30f steel sound through all and into the bladder. As the patient emerged from the influence of the ether, it was observed that there was no longer any of the spasmodic action of the cremasters. When he became conscious, he stated

that he already felt less of his nervous feelings than for many months. He was "certain that the right chord had been struck."

October 8. Improvement continues—no return of spasmodic motion.

October 20. Examination with 30f bulb shows a slight clinging at one-fourth inch from the external orifice. Cut this at once, and freely, with straight bistoury, and pass 31f. The patient, on the following day, expressed his belief that a complete cure had been effected; that since the final division of the meatus he had not had the slightest return of the abnormal sensations and pain with which he had, in some degree, constantly suffered for the previous four years. Daily introduction of the bulb was kept up, in this case, until all bleeding ceased, when the patient was dismissed with the promise on his part to inform me by post if he had any return of his trouble.

CASE 13.—Mr. H. D., aged fifty-one, had been under my professional care for several years; suffered from renal colic on two occasions—once in 1869, and again in 1871. Was not conscious of having passed any stone through the urethra. Came to me in February, 1872, complaining of a sense of irritation at the *glans penis*, and a frequent desire to urinate. Careful exploration of the bladder failed to discover any calculus, but the *meatus urinarius* was red and tender, and contracted to 20f. This contraction was at once divided freely; size not noted. The relief from the irritation was immediate and complete. In May, 1873, Mr. D. called, stating that his old irritation had returned. Examination showed that the meatus had recontracted to 23. This was again divided, with relief equally prompt as on the first occasion; but in the subsequent daily introduction of a glass tube, size, 30f, an unnecessary degree of violence was used by the patient, setting up an inflammation, which extended back as far as the prostate, and threatened to culminate in an abscess of

that organ. This inflammation was accompanied by a discharge which did not differ from an ordinary gonorrhœa in the declining stage. After two months of treatment the discharge still continued, with more or less irritation of the vesical neck. Meatus contracted to 24. Again cut to 30f. This operation was followed by immediate relief from the vesical irritation. The discharge ceased without other treatment, and up to January, 1874, the cure has remained permanent.

CASE 14.—Mr. M., aged twenty-seven, had a history of seminal weakness, following self-indulgence from fourteen to seventeen. Has never had venereal disease. Began to notice a lack of virility a year ago. Seminal emissions weekly. Erections imperfect. Frequent desire to urinate, which is promptly relieved by tr. ferri. mur.; but this soon causes constipation (in spite of any thing short of brisk cathartics), and increased seminal discharges result. Has a constant and annoying sense of wetness about the glans. Always dribbles in his clothes after urination. Microscopic examination of urine shows nothing abnormal but a few shreds of mucous. Prescribed mixture of bromid. potass. and bromid. ammonium, which arrested seminal emissions for a full month. He returned in better spirits. Has much less sexual desire than formerly, and occasional imperfect erections. Has not been obliged to urinate more than three or four times a day since taking the bromides. When he came to me he described the desire to urinate as *unceasing*. After a month he returned with some measure of his urinary irritation, although still taking the bromides. Great annoyance at the dribbling after urination, and says that the constant sense of *wetness* is depressing to the last degree. Examined meatus critically; 30f passes, but hugs slightly on return; 31 will not pass. Size of flaccid organ three and one-half inches in length, and four in circumference. From this I estimate the normal caliber of the urethra at 38f at least.

As the dribbling seemed to indicate some retention at meatus, I concluded to divide it freely. This was done without pain, under the influence of local anæsthesia, when bulbous sound No. 38f was passed with ease through the length of the urethra, detecting several small sensitive granular points in its course. The relief from the dribbling in this case was immediate and complete, and the *sense of wetness* (as the patient always expressed it), which gave him so much annoyance, was completely removed. Although taking no internal remedies, he has had no return of emissions; the irritation of the bladder also disappeared, and up to the present, one month from the date of operation, it has not returned. In this case the difference between 30f, which measured the size of the evidently contracted and unresilient meatus, and 38f, which was easily passed after division of the stricture, viz., six millimeters, shows the extent of the contraction.

CASE 15.—A. W., aged twenty-seven, seventeen years ago had first attack of gonorrhœa. Afraid and ashamed to speak of it, he suffered greatly for four or five months without any treatment whatever. Has had several attacks since, which were treated solely with injections. About six months ago had an attack of sub-acute prostatitis, which caused him much pain, both in urination and defecation. This lasted several weeks. Since that time he has had desire to urinate more frequently than natural—several times during the day, and also disturbed frequently at night. For the last five days he has been obliged to pass water almost every hour during the day, and at least every hour during the night, suffering great pain in the perineum, also in the rectum, at each act of micturition. He has, besides, a constant desire to defecate. January 10, 1874, examination, per rectum, reveals a tender and enlarged prostate fully double the normal size. External genital organs normal, except the *meatus urinaris*, which was contracted to 20. Circumference of penis

three and one-fourth inches. On passage of 20 bulbous sound, a distinct, unyielding fibrous ring was detected, which held the bulb firmly at one-fourth inch on its return. 19 detects second stricture at one inch, and a third at one and three-fourths.

For the patient's immediate relief, half a dozen Swedish leeches were ordered to be applied to the perineum at the anterior border of the anus. Morphia suppositories every four hours. Under this treatment, with rest in bed, the rectal discomfort abated. Frequency of micturition, with pain in the perineum and rectum, remained without much amelioration until January 16. On this date the patient was etherized, and with the assistance of Dr. Beach Jones and Dr. Wiesfelder, I first divided the stricture at the meatus freely with Civiale's *bistoury caché*; then, introducing the small dilating urethrotome, I dilated to 30f, and cut the second stricture at one inch; readjusted and cut the third at one and three-fourths, after which 31 steel sound was passed readily into the bladder.

The relief from pain and irritation in the rectum and at the neck of the bladder followed the operation almost immediately. By the following day the desire to urinate was reduced to the normal standard, and the patient was disturbed only once during the night. February 10, twenty-six days after the operation, he reports himself as having had no further trouble, and as passing his water two or three times during the day, and once at night. Examination per rectum shows the prostate free from tenderness, but fully double its normal size. Thirty-one steel sound passes through the urethra without the slightest trouble.

CASE 16.—Mr. X., aged fifty-four, seen in consultation with Dr. Ives, his family attendant. Had a history of first gonorrhœa twenty-eight years previous; severe, lasting two months. Second attack eight years ago; not severe, subsiding entirely in ten or twelve days under the use of injections of acetate

of lead alone. Three years ago he began to be troubled with frequent micturition during the day, and four or five times at night, associated with pain extending from the end of the penis to the neck of the bladder; also pain in the testicles and perineum, and extending down the thighs. Water occasionally stopped, and required to be drawn off with a fine catheter. Was taught to do this himself, and has often required relief in that way. About the first of August last, after using the catheter, he discovered a small bit of gravel in the eye of the instrument. Since that time he has voided a large quantity of the same sort, with fine, whitish sand, mucus, pus, and blood. Was under the care of a prominent surgeon in Brooklyn last summer, who, after careful examination, assured the patient that he had no stone in the bladder. This surgeon treated him at first by frequent washings out of the bladder; afterwards he used the galvanic current, with one pole in the bladder and one on the back. This was continued *daily* (?) for six weeks, but no improvement was manifest, and as the patient was much debilitated he was sent into the country to recruit. Since that time he has had no treatment except the use of Lee's lithontriptic pills, and the use of the catheter when required by attacks of retention of urine.

November 24, 1873. Present condition: Is in feeble general health. Has an expression of great and constant pain; is very restless and moans frequently, although evidently attempting control; skin pale and yellow; says his weight is 130; weight formerly 160. Genital apparatus well developed. Right testicle invaded inferiorly by a mass of fibrous feel, involving one-half the body of that organ. Left much the same, but softer. Passes urine in my presence in a small, divided, uncertain stream. Urine of strong, stale odor, thick, and muddy in appearance. Coagulum under heat, which is not dissolved by nitric acid. cursory microscopic examination shows cells of pus and blood. Epithe-

lium from urethra, bladder, and pelves of kidneys, but no casts. Meatus urinarius apparently normal. Twenty-nine bulbous sound passes to the depth of one-third of an inch; it is, however, abruptly arrested at this point, and only 20f will pass. This (No. 20) found no farther obstruction in the deeper portion of the canal, but on return was firmly held at three-fourths of an inch, thus defining a stricture more than one-third of an inch in breadth. Visiting the residence of Mr. X., November 26, he was found walking the floor with constant moans, begging to have the operation done at once to relieve his agony. Assisted by Dr. Ives, the patient was promptly anæsthetized. The stricture near the meatus was then thoroughly divided, and No. 30f bulbous sound passed through to one inch—here it was abruptly arrested; 24f only would pass, and was held firmly on return at one and one-third inches. I then introduced the dilating urethrotome, turned up to 30f, and cut; 30f bulb was passed down to two inches, where it was again arrested; 28f only will pass, and on withdrawal is held at two and one-fourth inches. Re-adjusting the urethrotome, this band was also divided, when 31f steel sound was passed without force through the entire urethra. Ferguson's short-beaked sound was then introduced into the bladder and thorough search made for stone, but without success. Hemorrhage slight, ceasing entirely within fifteen minutes after the operation. Dr. Ives remains in charge.

November 29, three days subsequent to the operation, Dr. Ives called, reporting that the patient had no pain of any kind following the operation, up to his visit of yesterday. Under the influence of ten grains of quinine and a quarter grain of morphia he had slept for six hours, and on waking passed water with freedom, with slight smarting, but no pain. After this the intervals between the acts of micturition averaged about four hours. Passed the steel sound 31 with ease. Purulence in the urine greatly decreased.

December 16. Dr. Ives reports Mr. X. as having suffered for a day or two past with pain in the penis. Purulence in the urine has entirely disappeared; 30 steel sound drops through the urethra into the bladder by its own weight. The possibility of slight recontraction of the stricture at the meatus as cause of trouble was suggested.

December 23, Mr. X. called with Dr. Ives. He reports, personally, that while he passed his water every half hour with great straining and pain before the operation, that since then he has not been called to urinate oftener than once in three or four hours, up to within a week since, when it has been once in two hours. All the pains in the back and lower part of the abdomen, in the testicles, and extending down the thighs, passed off entirely within a few days after the operation. During the last ten days he has had pain referred to in the vicinity of the prostate when urinating, and the stream has been small and weak; could void it only by straining. He had himself passed 30f steel sound the day previous.

Examination of the prostate, per rectum, reveals no enlargement or tenderness; 30f sound passes without difficulty into the bladder, except a little hugging near the meatus; 29f bulb is arrested at one-fourth of an inch, and holds on return at three-fourths. I introduced a straight bistoury and cut through the contraction, so that No. 34f bulb passed in and out without obstruction, to keep this well open until healing is complete.

CASE 17.—October 9, 1873, I was called to see a gentleman aged sixty-four, whose general health had always been good; he had lived generously, but regularly. He stated that for the ten years previous he had occasion to urinate on an average every hour during the day, and through the night even more frequently; for the previous six months he was confident that he had micturated every half hour, unless some necessity prevented, when he always suffered from the delay.

At no other time had he any pain; the frequency of micturition was simply an inconvenience. He stated that he had never had any gonorrhœal trouble. Several years previously he had consulted an eminent surgeon in regard to his urinary trouble, and was said to have "stricture just beyond the middle of the penis." For this he was treated by the occasional introduction of bougies for a couple of months, at the end of which time, no benefit being apparent, he ceased bestowing any attention to the matter. About three months ago he began to notice a creamy sediment in the urine, which would cling to the floor of the *pot de chambre*. It was not, however, until about three weeks ago that he began to suffer actual pain and straining on passing his water. To this was soon added pain *in the testicles, through the hypogastrium, and also in the perineum, and extending down the inner aspect of the thighs to the knees*. The stream of urine was subject to frequent sudden arrest, and the straining which followed was severely painful, and pain extended throughout the regions previously mentioned. The urine soon became of a deep reddish brown color, with occasional strings of blood and mucous mixed with the copious creamy sediment, which was now persistently deposited. Notwithstanding all this, he continued to ride daily, a distance of some three miles, to his office. About a week since, finding the motion of his carriage greatly aggravating his pains, he consulted an eminent medical personal friend of his, who informed him that he had a grave cystitis, and commended him to my care. I found him sitting on a hop poultice, which had been prescribed for him by his wife's medical attendant (a homœopath), and ascertained that he had been taking frequent doses of a homœopathic preparation of belladonna.

Present condition: Constitutional disturbance very slight, pulse 80f, temperature 93 $\frac{3}{4}$. Inspection of urine in the *pot de chambre* (which was about one-third filled, and had been

standing for several hours) showed a deposit of mucous and pus, stained and streaked with blood, fully one and a half inches in depth. Examination per rectum determined the prostate to be of even less than the normal size, and free from tenderness.

The introduction of Ferguson's short beaked sound (No. 20f) into the bladder was effected with great gentleness, but with ease, and without meeting with any abnormal impediment in its passage. The bladder was then thoroughly explored for calculus, but with a negative result. Confident, at first, from the history and condition of the case, that it would prove to be one of stone in the bladder, I had, thus far, only cursorily examined the meatus urinarius. Ferguson's sound (No. 20f) had passed through it easily. 22f and 23f bulbous sound were now passed with ease, but 24f was held at one-third of an inch. After slight pressure for a few seconds it slipped suddenly through a ring of fibrous tissue and passed, without obstruction, down to the bulbo-membranous junction. The patient was then put upon a free use of infusion of *triticum repens*, and suppositories of belladonna and hyoscyamus every six hours.

A subsequent microscopical examination of the urine showed pus and blood in abundance, some urethral and vesical epithelium, none from the ureters, or pelves of the kidneys, no casts. Albumen slight; specific gravity 10.20.

On suggesting to the patient that division of the strictured meatus was likely to be a necessity before much relief would occur, he desired that his friend, Dr. J. Marion Sims, should be called in consultation.

On Thursday, the 14th, after an exhaustive consideration of the case, Dr. Sims coincided with me as to the possibility, nay (in the absence of calculus and prostatic disease), of the probability, that the well-defined contraction at the meatus was the original cause of the cystitis, and might be justly held responsible for its continuance. The operation was at

once decided upon, and the patient placed under the influence of ether by Dr. Harry Sims. I then thoroughly divided the contraction—first by the use of *Civiale's bistoury caché*—completing the division of some remaining elastic fibres with a straight blunt bistoury, until the opening admitted bulbous sound 31. This was then carried easily down to the membranous urethra, without discovery of any farther obstruction. The bladder was again thoroughly explored for calculus by both Dr. Sims and myself. It was found to be much contracted and thickened, but contained no stone.

On the 15th (the day following the operation) I ascertained that, since the division of the contraction, our patient had not had the necessity of passing his water more than once in two hours, and that the pains in the testicles, the hypogastrium, the perineum, and down the thighs, which had previously been his chief points of suffering, had *entirely disappeared*. There was manifestly less blood in the urine. By the 16th the pus had diminished one-half in quantity, the blood had entirely disappeared, and the intervals between the acts of urination had increased to two hours and a half. From this date the only treatment to which the patient was subjected was the daily introduction through the meatus, into and not beyond the fossæ navicularis, of a No. 31 bulbous sound. By the 26th (twelve days from the date of operation) the purulent sediment in the urine had entirely disappeared; riding or walking no longer gave him discomfort, and he had resumed his business. The intervals between acts of urination now vary from two to three hours. There is an occasional occurrence of spasm during the act, which causes the sudden stoppage of the stream, and the urine is voided slowly, and with but little more force than before the operation, but he is not conscious of any other abnormality remaining. He expresses himself as feeling and being in better condition than for years. A few days subsequent to this interview with the patient he went abroad to remain during the winter, and I have not since heard from him.

CASE 19.—Aaron, aged sixty-eight. History of a first gonorrhœa at twenty-one. Married at twenty-seven; had seven children, and no trouble with genito-urinary apparatus until four years ago, when he contracted another gonorrhœa. This, after a month, subsided into a gleet, and to this, in about three months after, catarrhal cystitis was added. The cystitis resisted every treatment, and has continued, in a greater or less degree of severity, up to the present time. About a year since he began to suffer with neuralgic pains in the groins and in the perineum, and he experienced a very uneasy sensation in his testicles, one of which became suddenly enlarged.

November 26, 1874. Penis only two inches in length, flaccid, three and one-fourth in circumference. Meatus 18f. Left testicle half usual size; right normal, but with a greatly enlarged and soft epididymis, almost entirely covering in the glandular structure, and forming a swelling above it as large as a Madeira nut, and described as the seat of long-standing and very troublesome irritation. Some muco-purulent secretion from urethra. Has been treated for some time by use of soft bougies, with pain and no relief. Complains of pains in back and groins, extending down along inner aspect of thighs; urination every half hour, day and night; freshly voided urine, loaded with pus and mucous; reaction alkaline; strong urinaceous odor; no renal epithelium or casts; albumen slight; is uneasy and restless in manner, and full of anxiety, quite like a confirmed hypochondriac. Examination with 18f bulbous sound detects a stricture at the meatus, extending back for half an inch, after which it slips down the urethra without giving evidence of any farther obstruction.

December 22. Saw the patient in consultation with Dr. Willard Parker. Division of the stricture at the meatus agreed upon. Ether administered by Dr. Charles Turnbull. The stricture at the meatus was first divided. Dense cic-

trical tissue, extending for fully one-half inch. Bulbous sound 32f was then passed to two and three-fourth inches, when it was arrested by a second stricture. 29f defined its calibre. The dilating urethrotome was then introduced, turned to 34, and the stricture divided. 31 solid steel sound then passed without obstruction through into the bladder. Relief to the neuralgic pains followed the operation almost immediately. Within forty-eight hours the intervals between acts of micturition had increased from one-half hour to four or five hours. Purulence in urine greatly decreased. Irritation in the scrotum ceased, swelling of epididymis gradually went down, and the patient made a complete recovery, without other treatment, *within four weeks*.

In the foregoing cases, presenting features more or less grave in their conditions and consequences, a point of significant interest is common to all, viz., an abnormal contraction at or near the meatus urinarius, the well determined sequel in the majority of instances of antecedent inflammatory action. Abnormal spasmodic muscular action plays a prominent part in every case. Spasm of the urethral walls, of the accelerator urinal muscles, of the cremasters, of the vesical neck, and of the seminal ducts, etc.; spasm, as in Case 10, so firm and persistent that the urethral walls finally gave way behind it; spasm that for months resisted the introduction of the smallest instrument, as in Case 3; spasm so persistent that the bladder was not allowed to completely empty itself for years (as in Cases 17, 18, and 19), and thus producing the chronic catarrh, which finally became so grave an element in these cases; spasm, as in Case 12, where the testicles played at see-saw for nearly three years, and until the poor wretch who owned them was driven to the verge of suicide.

Some one or several of these conditions appear as a persistent feature in each. Spasm, a well recognized result of irritation, is equally significant of debility. Most of the

cases, if not all, were subjects of sexual excess. Irritation supervening upon nervous debility, spasm naturally results. Irritations which are known to give rise to reflex disturbance are *not of necessity painful irritations*, or which by any special sensation invite attention at once to the source of trouble. Dr. Hanfield Jones (in his work on Functional Nervous Disorders, page 704), says: "It seems to be well ascertained that *unfelt* irritation may give rise to very various morbid phenomena, affecting both the motor and sensory nervous organs. Dr. Brown-Sequard maintains that various forms of insanity, of vertigo, chorea, hysteria, tetanus, etc., may be due to irritations, starting from a centripetal nerve, and frequently *slightly felt* or *unfelt*, and that the suppression of these irritations may promptly cure the patient." He cites a case where a married lady suffered for a considerable time with a uterine neuralgia, which ceased completely on the extraction of a tooth that had not caused any considerable annoyance.

In the excellent little *brochure* on Stricture of the Urethra, by Samuel R. Wilmot, London, he says: "It is easy to conceive with what ease morbid irritation in the urethra may elude detection, and which, though slight, may be capable of exciting perfect reflex action, particularly in systems of high nervous mobility, and, where the slightest irritation exists within the urethra, the mere influence of the mind, derangement of the digestive organs, and various other remote causes will lead to spasm." What, then, in these cases of evident reflex nervous trouble, is suggested as the cause of the irritation? Division of a contracted meatus, as has been shown, relieves the reflex disturbance; and yet simple contraction of the meatus can not be sufficient to produce such morbid nervous actions as cited; for it is well known that congenital contractions at this point are frequent, and yet no irritation ensues. In congenital contractions, however, the muscular surroundings of the urethral orifice are

in a normally supple condition, and able efficiently to play their part in completely emptying the urethra after micturition. Let this delicate muscular structure become infiltrated with plastic material, and the complete discharge of the last drops of urine, through its action, is rendered impossible. A *dribbling* after the act is the necessary consequence, and this is also an *unvarying* feature in all the foregoing cases. It is this inevitable retention of a few drops of urine which I believe to be the starting-point of the irritation. As time goes on, and the resulting plastic exudation becomes organized, cicatricial tissue forming and necessarily condensing, a permanent contraction results, which adds to the muscular inefficiency, especially when it occurs in an orifice congenitally insufficient. It is this condition which often prolongs a gonorrhœa, and is the most fruitful source of chronic urethral discharge following a gonorrhœa. That the retained urine causes the irritation I am led to believe still farther, inasmuch as behind structures at the meatus granular spots of inflammation occur, sometimes extending throughout the urethra, and on relief of the stricture promptly disappear without other treatment, as in the third case cited. I have seen many such. Local points of tenderness were present in almost, if not quite all the cases of reflex urethral irritation that I have met.

Then, as the urethral orifice becomes permanently contracted and unyielding, a distinct and sudden *arrest* of the stream of urine repeatedly occurs during the forcible acts of urination. Is it too much to believe that the force of this blow at the point of arrest will add to the irritation, and that the effect of its recoil should be felt back even to the vesical neck? It seems to me that this may, after long years of such constant irritating influence, prove an important element in disturbing the harmonious action of the complex sensory, motor, and sympathetic nerve distribution, in the deeper parts of the urethra.

Considering the force and persistence of the spasm in certain cases, the idea of its *tetanic* nature has suggested itself, induced by pressure and irritation of the nerves of the glans, in the cicatricial contraction. The treatment of the contractions by complete division, resulting in prompt and notable relief in all the cases, is equally suggestive of simple mechanical obstruction, urinary retention, or cicatricial irritation. To be effectual, however, the division must be absolute and entire. It is not sufficient that the meatus be enlarged up to the normal urethral caliber. The incision must reach down *through all cicatricial tissue*, and so completely that the largest sized bulbous sound which can be passed through the opening shall pass in and return *without the slightest sense of resistance*. If it is less than this, the contraction is absolutely certain to return within a few weeks, often within a few days, in spite even of every possible effort to keep the parts dilated. Once, however, the stricture tissue is completely divided, it is then only requisite that the edges of the wound be kept asunder by the occasional introduction of a sound, until granulation is established throughout its extent. After this (if no new inflammatory action is set up) not only will no recontraction take place, but the old abnormal fibrous material will in time become wholly absorbed. This important statement, applying virtually to all strictures of the urethra wherever located, I do not make without the ability to prove it by the results of this plan, as presented in many cases thus treated, in over thirty of which examination has been had at periods varying from two years and three months to six months from the date of operation. During the last month I presented before the members of the New York Medical Journal and Library Association a case where originally six urethral strictures were present (including one at the meatus) of a size of 24f. These strictures were operated on (completely divided) with the dilating urethrotome in January, 1871, more than two years pre-

vious. Examination with the bulbous sound No. 30f, in the hands of a committee, consisting of Prof. Alfred C. Post, James M. Miner, and Dr. J. DeForrest Woodruff, failed to detect the slightest stricture, either at the meatus or at any other point. In order to demonstrate the complete restoration of this urethra to its normal resilience, by gentle pressure, I introduced, in the presence of the members of the Journal Association, a bulbous sound, 34 M. in circumference, through the meatus, and down to the bulbo-membranous junction.

DISCUSSION.

Prof. Alfred C. Post, after expressing his thanks for the very interesting and valuable paper presented by Dr. Otis, said there was a single point which had been made concerning which he had some personal knowledge, viz., that one part of the body may be the seat of a painless affection, and yet cause distressing symptoms in some other part. Twenty years ago he suffered with a neuralgic affection for several days, when he discovered that a wisdom-tooth was the offending cause. This removed, the pain was at once and entirely relieved. Afterward, on relating the case to a dentist, he remarked that it was nothing new; that he had often met with similar cases. Dr. Post had also met with several cases of incontinence of urine in children, associated with phimosis, and which, treated by removal of the prepuce, resulted in cure without other remedial means. He had not met with the class of cases referred to in the paper just read, but he considered them analagous to those above related by him.

Dr. Richards had observed the association of varied reflex phenomena with stricture of the œsophagus and trachea, and could not but be struck by the coincidence in the character of the troubles with those described by Dr. Otis.

Prof. Detmold remarked that the facts presented by Prof. Otis were not surprising, if we stop a moment to consider that the sensitive point of all the tubes of the body is at the

openings. Normally there was no sensation in the cavities. If there was stone in the bladder the pain would be felt at the glans penis; and, besides, the most sensitive region of the human body—that with which the entire individual most thoroughly sympathizes—is that of the sexual organs. In connection with the feeling of *wetness* which is alluded to in some of Dr. Otis's cases, he had noticed that the feeling of cold was complained of by patients suffering from stricture and the resulting irritation, and was rather surprised that it was not mentioned among the cases related by Dr. Otis.

Dr. Otis remarked that he had not unfrequently met with cases suffering from seminal debility where the feeling of cold was complained of, but it was not present in any of the cases referred to.

Dr. J. G. Adams would like to ask if Dr. Otis had any faith in *dilatation* for the relief of such cases as he had described.

Dr. Otis replied that he had none; that complete division was the only remedy he had any confidence in. One of the most aggravated of the cases presented had been subjected to careful and persistent efforts at dilatation, the effect of which had only been to aggravate the troubles of the patient. He had, however, seen a number of cases where the difficulties had been temporarily relieved by a division which was not complete. These cases had occurred at his clinique, where the daily attendance necessary to prevent recontraction could not be secured.

Dr. Detmold stated that a patient of Dr. Otis's, whose meatus had been divided for a slight stricture, had come to him for treatment, and that he was the subject of an intense and painful orchitis; that he had refused the case, and had sent him back to Dr. Otis's clinique. He would like to know if this was the result of the operation, and if cutting stricture at this point had ever brought about troubles elsewhere.

Dr. Otis said he would not attribute the orchitis to the in-

cision; that if not the result of extending urethral disease, it was probably caused by the introduction of a sound through the curved portion of the urethra; that the simple division of stricture had never in his experience produced inflammatory trouble at any point, but that on several occasions the forcible attempts, by the patients, to keep the incision open, had resulted in inflammation of the glans, and in one instance had extended down the urethra, simulating an ordinary sub-acute urethritis, until it involved the prostate gland. It should have been remarked that several of the cases of reflex irritation reported were associated with an enlarged and sensitive epididymis, and that these conditions, as in Prof. Parker's case, were relieved by dividing the stricture at the meatus.

Dr. Detmold remarked that in a certain proportion of strictures there was also enlarged epididymis; but in the case he had referred to it was not a chronic condition, but an acute inflammatory swelling of the body of the testicle. If Dr. Otis ascribes this condition to the dilatation, does he believe that dilation after or before cutting the stricture will bring about an orchitis? It must have been a combination of the incision with the injudicious dilatation, for he had never seen dilatation alone produce an orchitis.

Dr. Otis had quite a different experience, and considered that the simple passage of an instrument through the urethra (sound bougie or catheter) was capable of producing such an accident, and this, too, when the introduction had been effected in the gentlest and most judicious manner. Dr. Otis referred to two cases published by him, he believed, in the Medical Record, in July, 1871, when the introduction of a soft bougie through a deep, but not very close stricture, was followed in both instances by an inflammation which could be distinctly traced, by the sensation of the patients, as it gradually extended through the entire course of the

vas deferens, terminating within forty-eight hours in an acute epididymitis.

Prof. Fordyce Barker spoke of several cases that had come under his observation, where disease of the orifice of the female urethra had simulated uterine disease, and that he could readily understand the possibility of such results as had been described by Dr. Otis as resulting from contraction of the male urethral orifice.

Prof. A. Jacobi remarked that he had no experience in such cases as those described, but that he would say a word concerning some of the symptoms alluded to. First, that of the sensation of cold. He thought Dr. Detmold had stated that this symptom was associated with partial or complete impotence. In such cases we had the symptom of cold from partial or complete paralysis of the vaso-motor nerves, and that in the cases related by Dr. Otis this symptom was necessarily absent, as the cases he recited were all those of nerve excitation, and not paresis. Then the feeling of wetness spoken of. There was no moisture in reality. The function of the urethra was to allow urine to pass; the brain identified this sensation with wetness. When the stomach is empty there is a feeling of hunger. When the mucous membrane is diseased, as in chronic catarrh, there is a feeling of hunger. In the same manner when we have trouble with the mucous membrane of the urethra we had the feeling of wetness.

Dr. Chamberlain spoke of a case which he had recently seen with Dr. Leaming, where a reflex irritation set up by a deep fissure of the anus had given rise to conditions which simulated locomotor ataxia, and which, on divulsion of the sphincter ani, was almost immediately and completely relieved from symptoms which had been said to indicate well-pronounced sclerosis of the anterior column of the spinal cord.

ART. V.—*On Artificially Produced Fever Processes in Human Bodies: Their Modus Operandi and Results.* By Z. COLLINS MCELROY, M.D., Physician to the Muskingum County Infirmary; Fellow of the Zanesville Academy of Medicine; Fellow of the Meigs and Mason Academy of Medicine; Member of the Perry County Medical Society; of the Licking County Medical Society; Secretary of the Muskingum County Medical Society, etc., etc. Reported to the Muskingum County Medical Society, at its Session in the City of Zanesville, Ohio, January 11, 1877.

It is one of the apparent paradoxes of life that physicians, whose mission is to prevent and heal human sickness, should be called upon, in most civilized countries, to produce in their fellow beings, at some period of their lives, an artificial fever process; in other words, to make them sick. Generally it is in the young, though quite often at later periods; and more frequently, at periods without regularity, efforts are made to reproduce the particular fever process in the same individual, to which reference is here made, called vaccination.

In some countries each individual born and reaching a certain age must be vaccinated. National or municipal law compels it, and provides or appoints certain persons to perform the service, and enforces on parents or guardians penalties for neglect or refusal to comply with the requirements of the law.

In our own locality, the presence of one or more cases of small-pox in the city, or its vicinity, is the signal for a general vaccination of the young, and revaccination of both old and young.

This is a voluntary act on the part of many, though with more it is compulsory in one form or other, either by councils of cities or towns, or boards of health, or, as is more frequent with us, by boards of education, or superintendents or teachers of public schools. In our city vaccination is not carried into effect under any competent professional supervision, but each school superintendent or teacher assumes to judge of its necessity in every case, after inspecting the cicatrices left by former vaccinations.

Vaccination was introduced into this country from England about the beginning of the present century, and rapidly grew in favor, until within the memory of many persons now living it was universally regarded with great favor. This state of the public mind, professional and non-professional, continued not far from half a century. Then doubters of its harmlessness and efficacy began to appear. These have gradually increased, until now they form a small minority of those best qualified to decide upon its advantages and hazards. As the evil effects sometimes following vaccination became too prominent to be poo-pooed away, attempts were made to explain them by referring them to the use of impure matter, or virus, conveying diseases from one person to another. Then epidemic and endemic influences temporarily prevailing in certain localities, where the bad results were numerous, were appealed to to explain them away. The bad results, however, increased in frequency and gravity—sometimes ending in death—until, to preserve it from falling into disuse, new expedients must be adopted to sustain it. Then came the explanation that the virus had, by frequent passages through the human body, become modified, and resort must be had to the original source of supply—the heifer. Now the fashion is to use the non-humanized matter, not in crusts, as formerly, but lymph from pustules on the udders of heifers, dried on ivory or quill points. Still the bad results continue to recur far too frequently, and so the number of persons who have had their faith in the harmlessness of vaccination seriously impaired continue to multiply.

The English medical journals contain many reports of very serious consequences occurring this season. Nor are these complaints confined to the British Islands. On the continent of Europe they are, if any thing, still more frequent. In England, just now, it is erysipelas, œdema, jaundice, etc., and both in England and on the continent more

or less mortality. This has been about our experience here, adding eruptions on the skin and chronic ulcers at and about points of insertion.

Until recently—and I mean within ten or fifteen years—it was not possible to answer the questions, “What is vaccination?” “What does it do, and how does it do it?” “How does it prevent small-pox?” as satisfactorily as it can be done now. But I believe—nay, I may say I know—that they can be answered with a near approach to accuracy now. That “vaccination is an antidote to small-pox,” that “it is a preventive of small-pox,” may once have satisfied inquirers, but does not now.

Various attempts have been made to explain its *modus operandi* in living bodies by referring it to some sort of fermentation, to the removal of matter susceptible of being modified by it, etc., but it was felt that they all fell short, and so the questions remained unanswered.

From the narrow basis which medical men have been contented to occupy in the study of life phenomena, it was not, and is not, possible to answer these or other like questions. Their mistake, past and present, has been, and still is, the consideration of the phenomena of life as apart from and opposed to the ordinary operations of nature around them. Nothing but catalogueing phenomena, and their subdivision in classifications, was possible from such a basis. Nothing of the relations of these various phenomena towards each other, and to other phenomena of nature, were possible, or ever made out.

But the dark cloud which has hitherto so effectually concealed from observation the inner workings of nature is slowly lifting, and some of the secrets of life have already been exposed to the light, and sooner or later all its workings will be explained.

Men of theology, men of science, students of nature, special students of life, have stood in the presence of one of life's

most important secrets all the time, but failed to see or perceive it. "Too fine for mortal ears," as one of our poets expresses it, thus:

"Heard melodies are sweet, but those unheard
Are sweeter," sang a poet dreamer well:
And somewhere in Arabia lives a bird
Whose little throat seems ever more to swell
With music, while her tender golden tongue
Throbs in its parted beak as if she sang,
Though ne'er by sound the throbbing air is stirred,
Save when on almond trees she folds her wings.
Yet men do follow her, and cry, "She sings;
Yea, always sings, had we but ears to hear."
And when across the vacant morning clear
Her rare and rapturous melody she flings,
"Oh, God!" they cry, low listening 'neath her tree,
"How ravishing sweet the unheard notes must be." *

"Too fine for mortal vision" have been "the forms of organic structure," the special combinations of matter adapted for and capable of performing the varied functions of complex animal existence, and so have been lost. The "forms of structure," which the material common to the earth of which they are composed, constitute the real secret of life. They open many doors admitting light into places hitherto shrouded in impenetrable darkness. Looking at them under powerful microscopes can not, and does not, throw light upon their functions. As well might the physical appearances only of the vaccine virus be studied to comprehend what it does in living bodies, introduced for the first time; or the physical appearances of materials used as medicines, studied to understand what they will do in living bodies. These are all "too fine for mental vision."

But to return from this digression to the dryer yet more instructive details of science. Observations and experiments, extending over many centuries of time, and by many

* H. B. Bostwick: *Atlantic Monthly*, December, 1876.

different persons, have conclusively established the following general principles concerning living beings and things. Slightly modified, they are applicable alike to inorganic and organic nature:

1st. Special "forms of structure" for each and every function performed by a living being or thing.

2d. Each special "form of structure" performs its natural or physiological function at the direct expense of its substance, as a candle in giving light; so much light, so much candle gone—its material decomposed, and returned to positions in inorganic nature. So, so much function performed by any tissue or viscus of a living body, so much structure less.

3d. Each special structure, in the act of decay and the performance of function, stores up the force in the requisite material for its own reproduction and perpetuation from new material.

4th. This special material, containing the force stored up in it for the renewal of the various structures from which it was derived from new material—the food eaten—is taken from the general débris of the wasted and wasting tissues, by the lymphatic system, and united with the ingoing stream of material, new and old, near the right auricle.

I believe that these general principles are as well established in organic life as the law of gravity, or that each living being or thing is due or owing to death.

With these well established principles in mind, a reply to the first question, "What is vaccination?" can be made so as to embody all the facts concerned and understood by most persons.

In the fewest possible words, the answer is: The artificial production of a fever process in the person vaccinated.

What does vaccination do?

Again, in the fewest possible words, we reply: Spoils more or less of existing tissue.

How does vaccination do this?

In the same manner as any other causes of fever operate—by modifying the molecular arrangement of the materials of structure, and, therefore, dynamic capacity.

The structures of the living human bodies have no permanence—none for any appreciable time. Whoever has read this paper from the commencement has not, at the moment he reads this line, the same body he had then. It does not change the actual facts concerned to say that the changes have been small. Men would not live to be threescore and ten if they were more rapid. The simple truth to realize is, that the human body has no permanence, alive or dead. The difference between an animate being and an inanimate thing is, that the one provides, within certain limits, for its own perpetuity; the other has no capacity for self-repair.

The sequence of events in vaccination and any other fever process, irrespective of type or external appearances, are exactly the same. The spoliation of tissue—its capacity to perform physiological or natural duty, more or less modified—must occur as a preliminary, and constitutes, in fact, the necessity for a fever process of any type or character.

Vaccine lymph, or matter, is material, storing up in its complex chemical structure force, or capacity, or power to modify, to a greater or lesser extent, the whole of the processes of nutrition or repair of a living body. It is worthy of special notice that vaccine matter, to produce the desired results—a fever process—must be inserted hypodermically. Introduced by the stomach or rectum, no such results follow as after insertion through the skin. The very first step towards vaccination is to damage the skin at a certain point by physical means—scratching, scraping, or cutting. On this abraded skin is placed the matter taken from a vaccine pustule on another person, or on a heifer, if bovine matter is to be used.

From the moment of contact the changes commence, “had

we eyes to see them." As they are "too fine for mortal vision," nothing can be known certainly until the phenomena acquire certain proportions, which bring them within the scope of our means of observation. At the end of one hundred hours, if humanized matter has been used, and from one to two hundred, if bovine, the changes, or modifications of structure at the point of insertion, are striking enough. An inflamed spot, surrounded by a zone of indurated or hardened tissue, exists. This gradually extends, when the general malaise—loss of dynamic capacity—becomes very marked. The lymph glands in the neighborhood share in the disturbance; while the temperature may be from 2 to 6° F. above natural. Appetite—demand for new material—much decreased, or modified, or gone entirely. Disposition, and mental and moral characteristics, much modified. In fact, all the phenomena of a fever process. At the end of two hundred hours, a larger or smaller space around the point of insertion may be greatly swollen and inflamed. The pustule, or pustules, have reached their full development, and from this, in straight or uncomplicated cases, the gravity of the phenomena decline. From the twelfth to twentieth day, the crusts formed at the point of insertion fall off, leaving a pit or excavation in the skin. New crusts form and fall off, or are detached by accident or design. From four to ten weeks elapse before the points of insertion return to the color of the surrounding surface.

Sometimes the actual healing process is long-delayed. From simple erythema to moist gangrene may be the condition of more or less structure surrounding the point of insertion, leaving an unhealable ulcer, or a large and unsightly cicatrix; or, as has been the case, death.

Examine the scar left at the point of insertion. The amount of physical violence used in the insertion of the "matter" does not account for the structural alterations of the skin found there. The "matter" inserted failing to

"take," the damage to structure then, incident to using it on an abraded surface, soon heals up, leaving no trace of any kind to show that the attempt had been made. Why this difference in the appearances of the surface after the "matter" failing or "taking?" A reply, based on the facts of a physical examination of the scar, would hardly fail to be truthful, and embody the real condition of things there and elsewhere in the body. The cicatrix—a name for the changed skin at the point of insertion—does duty as skin, just as cicatrices do from any cause elsewhere on the surface, but it is not natural skin. Now, it is very common—absolutely universal—to say that the sun rises in the morning and sets in the evening. It appears to do so. But does it do so in fact? If seeing with the natural eye is to be trusted to get at the truth it certainly does. But sight does not always detect fallacies. We may continue to speak, and our almanacs may continue to publish the time of the sun's rise and setting, in tables, yet most people know that the sun neither rises nor sets. Our saying so is a convenient fiction to express an apparent fact. We may call the changed skin left by the vaccine pustule a cicatrix, or scar, but it is also true that the structure of the skin has been changed, not so as to prevent it doing the duty of skin, but, nevertheless, greatly modified, when compared with the surrounding tissue.

Has the remainder of the body undergone no changes of structure—to the eye, assisted or unassisted? Apparently not. If it has not, if the whole of the tissues have not undergone more or less structural changes, vaccination would be a very useless proceeding, for it would not prevent the recurrence of small-pox, so called.

These structural changes, like many other phenomena of nature, are far "too fine for mortal vision."

What vaccination really does, therefore, is to produce, artificially, the necessity for a fever process, by means which more

or less modify the structural arrangement of the materials of structure, not so as to prevent the performance of natural function, or more or less apparently natural function, in the bodies of those subjected to its operation. In a large number of persons this process can not be repeated through life.

“How does it prevent small-pox?”

The materials, storing up the force, which, introduced into a living body, produce the train of phenomena called small-pox, produce structural changes in a manner so like that of vaccination that they admit of substitution, the one for the other. And the reason that vaccination is preferred, and sought after as a protection against small-pox, is that its phenomena are brought about with less violence, and, therefore, less risk to life.

It is seen, therefore, that both vaccination and small-pox terminate in a modification of the structural arrangement of the material of living bodies subjected to their processes, on which life momentarily depends, always and necessarily accompanied by more or less risk to life. But these changes are “too fine for mortal vision.” It requires the same mind work to comprehend them that it takes to understand that the snow which to-night covers the face of the earth in our locality ascended, in the form of invisible vapor, from its surface, right past our eyes, though we could not, as we did not, see it.

Are all persons, irrespective of their age, health, and other conditions of life surrounding them, proper subjects to be made to pass through the phenomena of the artificially produced fever process called vaccination? I think not. And it seems to me that the apparently accidental bad results occasionally following indiscriminate vaccination fully sustain this conclusion.

Men, women, and children who reproduce their structures imperfectly, as in the so-called scrofulous condition; or with difficulty, as in so-called chronic dyspepsia, liver complaint,

etc.; or where there are chronic skin diseases, so called; or, in a word, persons of weakly constitution, or in the decline of life, it seems to me, should be vaccinated only under the press of urgent necessity. Better far that such persons take the risks of small-pox, except only when fully exposed to contagion through life, rather than have the certainty of vaccination, with its possible sequelæ.

I am prompted to make these remarks partly in consequence of the presence of some small-pox cases in our city at this time; partly because I have sought a suitable opportunity to state the results of my observations for a long period, and partly from the exercise of authority on the part of the Board of Education in ordering all children in any way connected with them to be vaccinated or re-vaccinated, as the case may be, or be excluded from further attendance at school. And all this without any reference to their condition of health or possible bad consequences. The teachers in the several school buildings examine the arms of pupils, and decide whether they have been properly vaccinated or not, generally winding up with sending them all away to be vaccinated before returning to school.

I could give, did time permit, many clinical cases, illustrative of serious results following vaccination. But these have now become so common that they are well known to the profession and people. I have, during my life, done my full share of improper vaccination; and may do some yet, but never without informing the parents (if children are to be vaccinated) or others who ask for it. And this very often against pecuniary interest.

I do not desire to convey to you the impression that I am opposed to vaccination; far from it. On the contrary, I am a firm believer in its propriety and necessity in a large number of cases. But I am also convinced that weakly children and youth, and most persons past fifty years of age, have no business with it, only as the smaller of two evils,

viz., a very strong probability of small-pox infection, or the certainty of vaccination.

The various expedients resorted to to check the declining confidence of the people in its propriety in every case, and reinstate it in full confidence, must necessarily fail. But in the end such measures will certainly be adopted as will secure its good results, and reduce its evil consequences to their minimum.

I here purposely confine my observations to the artificial fever process brought about by vaccination, leaving out of consideration fever processes brought about by other means, as inoculation with small-pox virus, blisters, and by some remedial agencies. I have recently seen an artificial fever process brought about by calomel and ipecac, with some very surprising results, in a case of chronic inebriation.

I offer the following conclusions, at which I have arrived after many years' observation and study of the subject, for consideration :

1st. That vaccination—the artificial production of a fever process in human bodies, resulting in modifications of the structural arrangements of its materials, and because of this fact—must always be attended with more or less risk to life and health to some persons.

2d. That weakly children and youth, and adults in the decline of life, are not proper subjects in whom to produce an artificial fever process, resulting in changing or modifying the structural arrangement of their tissues, for any other reasons than those of the most imperative necessity.

3d. That the authority now exercised by boards of education, school superintendents and teachers, in compelling vaccination and re-vaccination, at each recurring small-pox scare, without competent professional supervision and assistance, is well calculated to bring increasing discredit on a really useful and necessary sanitary measure.

ORIGINAL LECTURES.

ART. VI.—*On the Legal Responsibilities of Medical Men.* Lectures Delivered in the University Medical College, New York. By STEPHEN SMITH, M.D., Surgeon to Bellevue Hospital, New York.

[Concluded from Vol. I., p. 152.]

Let us finally consider your relation to the patient at the termination of the case. The question which will most interest you will be the collection of your fees. It may appear to be a matter of little importance how you make out your bill, but the courts have decided otherwise. Your charges must be specific and in detail to conform to legal decisions. A general charge of a gross sum has been rejected. The amount charged is subject to the following rules: If there is a fee bill adopted by a medical society, the members are bound by such rate or scale of charges. The adoption of such a bill, and especially its publication, gives it the character of a contract with the public. If there is no fee bill you are allowed to charge a *reasonable* compensation. The reasonableness of the charge will depend upon your rank or standing in your profession, the character of the services rendered, and the ability of the patient to pay. A physician who has gained such position that his services are especially sought for is entitled to a higher grade of compensation than the ordinary practitioner. It is held that a medical man of great eminence may be considered reasonably entitled to a larger recompense than one who has not equal practice, after it has become publicly understood that he expects a larger fee, inasmuch as the party applying to him must be taken to have employed him with a knowledge of this circumstance. A physician of eminence is also held to a higher accountability, for he is expected to exhibit extraordinary skill. It is a rule of law that if there has been no benefit derived from the service, there shall be no

pay; but this rule does not apply to the service of the physician. The medical practitioner does not guarantee a cure, nor even benefit; he simply assumes to do all that can ordinarily be done for the given case under existing circumstances. You can place your own estimate upon the value of your services, but the estimate must be reasonable and within the limits of a prevailing fee bill, or of a judicious regard for all the conditions under which the service is rendered. You may finally take into account the ability of your patient to pay—the poor can not pay the fees of the rich, and practitioners are bound to discriminate. If a physician of standing should have one uniform rate of charges, the poor might be deprived of his services. But because a patient is wealthy you are not thereby entitled to make extortionate charges; your compensation must be reasonable, due regard being had to the nature of the services, your rank, and the patient's pecuniary responsibility. But the rendering of your bill may develop a new phase of the case. The patient may refuse the bill on the ground, 1st. That you are not a qualified physician. If you reside in a State which has no statutory enactments requiring special qualifications, his charge is groundless, for every man may practice medicine and collect fees; but if there is a law requiring that every person exercising the duties of physician shall be a graduate of a chartered medical college, your diploma will disprove the charge. 2d. That you were negligent. This charge, as I have intimated, may take many forms. It may be alleged that you do not visit your patient sufficiently often. This charge must be determined by the judgment of competent physicians on a full narration of all the circumstances and conditions of the case. You may be very attentive to every indication of the case, but a single one, which you neglect. If that fact can be proven it is fatal to the entire attendance, for the contract is an entire one. You may have made a false diagnosis when proper

care would have directed you rightly. An error in diagnosis is followed by errors of treatment, and a train of unfortunate consequences may thus follow of the most disastrous nature. If a charge of this kind is made it must be proven that the error was due to negligence, and not to defective judgment, for the physician is not blamable who commits an error of judgment. If it were due to negligence, there was not that ordinary knowledge exhibited which the profession of that particular locality possessed. 3d. That you did not follow prescribed rules, or, in other words, that you experimented, and, as a consequence, the patient suffered damage from your treatment. It has long been regarded as very obstructive to the progress of practical surgery that the practitioner can not depart from established rules without incurring the liability to the charge of malpractice. And yet the law holds the surgeon only to that degree of responsibility which protects society from ignorant pretenders. In a recent case, in which this question was thoroughly discussed, the judge remarked, in substance: Much was said on the argument as to the right of the surgeon to exercise his own judgment as to the mode of treatment he will adopt in the case of a wound or of a disease which he is called upon to treat; that neither the rules prescribed by witness, nor those acted upon by other physicians, can apply to every case; and hence latitude must be allowed for the application of remedies which the attending physician or surgeon has found to be beneficial. If this is not allowed, the argument is, that all progress in the practice of surgery or physic must cease, and the afflicted lose altogether the benefits of experience and of remedies that science furnishes for the alleviation of suffering. It must be conceded that if a surgeon is bound, at the peril of being liable for malpractice, to follow the modes of treatment which writers and practitioners have prescribed, the patient may lose the benefits of recent improvements in the treatment of diseases, or discoveries in science, by which

new remedies have been brought into use. But this danger is more apparent than real. Some standard by which to determine the propriety of treatment must be adopted, otherwise experiment must take the place of skill and the reckless experimentalist the place of the educated, experienced practitioner. When the case is one as to which a system of treatment has been followed for a long time, there should be no departure from it unless the surgeon who does it is prepared to take the risk of establishing, by his success, the propriety and safety of his experiment. The rule protects the community against reckless experiments, while it admits the adoption of new remedies and modes of treatment only when their benefits have been demonstrated, or where, from the necessity of the case, the surgeon or physician must be left to the exercise of his own skill and experience. These remarks place in clear light the duties and obligations of the practitioner who departs from established rules.

4th. Finally, he may make the general charge of malpractice, alleging want of skill, negligence, etc., in redundant legal phraseology. The best protection against such charges is, first, scrupulous attention to all details of the case; second, the advice and coöperation of a neighboring practitioner, whenever there is much doubt as to the course to be pursued. The practice of making daily notes of every important case can not be too strongly urged. In these notes you should specify every essential fact, with a statement of the persons present each time. Many physicians have, by the aid of such memoranda, disproved the prejudicial evidence of bystanders. There ought to be more friendly advice and coöperation among physicians living in the same localities. Every general practitioner in the country, sooner or later, will feel himself in need of that support and countenance which his neighbor alone can give. If at the outset of a fracture two physicians consult and agree as to the plan to be pursued, and afterward occasionally confer as to the

progress of the case, their joint testimony proves impregnable in court.

The conclusions which I wish you to remember are, that the civil obligation now requires—

1. That degree of knowledge of your profession which will enable you to treat each case which you undertake understandingly and safely.

2. That your practice must correspond with the latest improvements in that branch in which any case falls.

3. That your knowledge must be diligently and skillfully applied throughout the entire case.

CLINICAL RECORDS.

ART. VII.—*Two Cases of Foreign Body in the Rectum.* By J. M. WEAVER, M.D., Surgeon to the National Home for Disabled Volunteer Soldiers at Dayton, Ohio.

At the last meeting of the Ohio State Medical Society the members present were agreeably entertained by Prof. C. S. Muscroft, of Cincinnati, who read a paper entitled "Foreign Bodies in the Rectum." The subject brought to my mind a case or two occurring in my own practice, which I give you.

During the spring of 1870 I was called to see a little boy, aged, perhaps, three years, who had been under the care of a neighboring physician for some time, suffering with alleged constipation of bowels. The mother stated that the little fellow would have a passage but once in three or four days, attended with much straining and violent effort, and resulting in the discharge of but a small quantity of fecal matter. He was quite feverish and fretful, with a full abdomen and foul-looking tongue. During my visit he manifested a desire to have a movement of the bowels, and in watching his endeavors I observed that during the violent straining the rectum and perinæum were much depressed. Introducing

my finger into the former, it came in contact with a firm, hard substance. Putting the child upon its back, and encouraging it to still press down, I introduced a small pair of dressing forceps, and removed a *metallic pantaloons button*, which lay transversely above the sphincter. The immense quantity of faecal matter that followed its withdrawal showed that constipation was at an end, and the services of a doctor no longer required.

The second case was one of more gravity and importance, but resulted equally as well. In October, 1873, I was called in consultation to see a young man in the country, who, in the evening, about twilight, had gone up into the loft of the barn for the purpose of throwing down hay for the feeding of his stock. Some ten or twelve feet below him was another mow of hay, in which there was a long-handled pitch-fork sticking straight up. In order to facilitate proceedings, he concluded to jump down to the lower mow. Owing to the darkness the hay-fork was unobserved, and in jumping he alighted immediately upon it; the end of the handle entered the anus, rupturing the sphincter, ruptured the posterior wall of the rectum, struck against the upper portion of the sacrum, and lodged to the left of the lower lumbar vertebræ, between that and the left ilium, the shaft of the handle breaking off an inch external to sphincter ani. This was the case as we found it: a man with *eight* inches of a fork handle within the pelvis, with only one inch of it remaining external upon which to seize to attempt extraction. Not only this, but the upper end of the handle being of greater diameter than the main portion, and wedged in tightly in the manner spoken of, caused it to be perfectly immovable. Of course the question was the removal of the foreign substance. The patient fully under the influence of an anæsthetic, a firm hold was taken and strong traction made, which failed to remove. A long pair of claw-shaped forceps was brought into requisition; this failed also. *Two men* tried

their united strength, and still without success. It was only by passing the hand into the torn rectum, and making a rotary motion, together with a long and strong pull, that the handle was removed. This man recovered fully from the injury. An abscess at the upper portion of the sacrum, where the head of the handle pressed the soft parts, was opened externally, and discharged quite freely for a few days, and then healed. The wound was kept well open below, and carefully washed out with carbolic acid. The bowels were confined with opiates for ten days, and then allowed to move naturally. In a month the patient was walking about, and in a short time thereafter was entirely well.

ART. VIII.—*Case of Biliary Calculi, Duodenitis, and Pancreatitis. Death and Autopsy.* By TOM. O. EDWARDS, M.D., Wheeling, West Virginia. Reported to the Muskingum County Medical Society, at its session in the City of Zanesville, Ohio, December 14, 1876.

Col. Allison, age 56; a lawyer; very corpulent; a large eater; did not drink; had not at any time taken any liquor; did not take much exercise; has been increasing in weight slowly for several years; was, on October 24th, taken suddenly with a sharp colic; could not locate the pain, which was severe and exhausting; the bowels were torpid; otherwise was in apparent good health. These symptoms yielded readily to a hypoderm. of morphia, one-sixth grain, and enemas of warm water.

Five days after he became jaundiced to a marked degree. This remained for three weeks, gradually disappearing without any treatment, except an occasional laxative. He was enabled to resume his business for a short time. With a returning appetite he was led into an error in eating that was followed by an attack of indigestion, which again compelled him to remain at home.

Soon great irritability of the stomach set in; vomiting of half-digested matter, mixed with bile; was persistent, and failed to be controlled by pepsin, bismuth, lactopeptine, cerium. calomel, morphia, lime-water, etc. From an ounce to a pint of bilious matter would be ejected at intervals in twenty-four hours; great thirst was present, and the water drank would be returned in a few moments, stained with bile. The urine reduced in quantity, heavily laden with urates; no albumen at any time detected; pulse ranging from eighty to ninety, fair volume; temperature only once above 100°, then only a degree temporarily; spirits of patient much depressed.

On physical exploration of abdomen, which was difficult, he being very fleshy, no enlargement of any organ could be detected; no tenderness, except in the region of the gall-bladder and duodenum. Sub-acute duodenitis, and catarrh of gall-bladder and duct, diagnosed, with a suspicion of fatty liver.

Sunday, December 3d. The patient gave evidence of a failure of life powers; a weak, rapid pulse; leaking of the skin; chillings, and a tendency toward stupor. Stimulants resorted to with no effect.

Monday, December 4th, the patient was no better. A consultation was called for. Dr. Hildreth came to our assistance, and confirmed our diagnosis. A blister was applied; stimulants diligently given, but with no effect; the powers of absorption seemed to be suspended. He gradually sank, and died on Tuesday, December 5, 1876.

Post mortem December 5, 1876, at 4 P.M., fifteen hours after death. Body well preserved; no emaciation; rigor mortis well marked; on section, the layer of adipose tissue was found to be about two inches in thickness all over abdomen. On opening this cavity the omentum was found to be heavily loaded with fat; the stomach was of an unusually large size; the liver did not present any marked extension of its nor-

mal boundaries, extending perhaps a little further to the left than normal; but, altogether, not strikingly enlarged, although possessing other characteristics of fatty degeneration.

The gall-bladder was very small, its walls thickened, the interior surface covered with calcareous plates, and partially filled with gall-stones; the ducts were pervious; the liver was a pale yellow color, cutting easily, leaving the knife blade greasy; its substance was soft, tearing easily. The interior of the duodenum was markedly congested, of a bright scarlet color a considerable distance above and below the opening of the common duct. This congestion did not extend to the stomach, the coats of which presented nothing abnormal.

At this point a remarkable condition was found. The pancreas was adherent to the duodenum, to the entire lower boundary of the stomach and the upper surface of the transverse colon, to the spleen and the left kidney. It was much enlarged, and appeared to be a cyst full of a soft, pulpy mass, its surface marked by numerous spots of a dark blue and black color, from a mere speck in size to a spot an inch in diameter. This color was more noticeable at its stomachic adhesion.

In attempting to remove this cyst a rupture of it occurred, and a quantity of dark-colored, offensive fluid flowed out, leaving as a residue a pulpy, ill-smelling mass.

The spleen and kidneys were much enlarged, very friable, and a pale-yellow color.

The lungs were apparently normal; the heart had undergone almost complete fatty degeneration, more so than any example, except one, that I have ever encountered in over one hundred and ninety autopsies. And I may say here that this is the only diseased pancreas I have ever met with.

In the light of the above facts, I think it is safe to conclude that the first attack was the passage of a gall-stone;

the subsequent jaundice being due to an obstruction of the common duct by another stone, or inflammation caused by the first.

The irritable stomach was probably due to its proximity, or, in fact, its adhesion to the diseased pancreas; and may this not satisfactorily account for the duodenitis as well?

The gall-bladder had evidently been subject to inflammatory action for some time; its walls were much thickened; the calcareous plates were probably precipitated cholesteroline.

If this life had not terminated as it did, it is highly probable it would have ended suddenly at no very distant day, by a rupture of the heart wall, or a failure of its power.

The most important factor in this death was the pathological condition of the pancreas; and, I confess, the most unexpected and unlooked for lesion.

The interest that attaches to the diseased anatomy of the pancreas is the interest of obscurity, the interest of diagnosis, and the interest of its situation; it is, in fact, from the situation of this organ that the importance and obscurity of its lesions result. Close to the stomach, spleen, colon, kidneys, duodenum, liver, aorta, vene cava, and celiac axis, it is in relation to the great vascular, nervous, digestive, and absorbent centers of the abdomen, and may affect them secondarily, be affected by them, or furnish a source of doubt whether it be it, or they, or both, that are at fault; and while it is thus placed at so important a point, medically its situation almost precludes it from the advantages of physical diagnosis. Niemeyer says not a word about it. Flint dismisses it with a page, and says, practically, diagnosis positive is not possible. Wood says: "It is scarcely ever possible to distinguish its diseases with certainty." "The secondary phenomena often completely mask the symptoms, so that it can not be detected, and often escapes suspicion." The records of the post mortem appearances of the pancreas are very few.

From an exhaustive article on this subject by Mr. Hyde Salter, of London, I glean but a few cases of inflammatory lesions, nearly all of which ended in gangrene. In an article by Dr. Pemberton, of England, I find the following: "Ulceration is a very frequent termination of inflammation of the pancreas, and from the small degree of *sensibility* with which this organ is endowed, the destruction may go on a great way without *pain*, or any symptom pointing to it."

This pancreas was gangrenous. How long the antecedent inflammation had been going on I do not know, but, judging from its extensive adhesion, I should say for some time; and as physiology teaches, the function of this organ is in close relation to the fat-forming or absorbing powers. Here is a case almost directly opposed to this theory, for this man was very fat; no emaciation during his sickness, and fatty transformations of organs going on for some time.

DISCUSSION OF THE CASE.

Dr. Holston remarked that the case was so well reported that it left very little room to say any thing about it.

Dr. McElroy said that he thought the case a very interesting one, from which very important lessons could be learned. The fact was, not that Col. Allison had duodenitis and pancreatitis, but that he had lost normal forms of structure in pretty much all that was contained in the abdominal cavity. He should incline to the opinion that the real seat of the trouble was in the lymphatic system, as it was that which supplied the necessary force for the reconstruction of wasting tissues in the performance of function. Possibly it was in the brain and spinal chord primarily. At all events, the post mortem was not such as science now demanded. It resembled too much the Jewish butcher's examination of the carcasses of animals slaughtered for food.

Dr. Larzelere said the case was interesting in many ways. Thinks that this gentleman was an easy liver—had a good appetite, gratified it, and did not take much exercise. What

are gall-stones? Why, cholesterine. And what is cholesterine? Why, hardened or crystallized effete matter, and retained in the body, instead of passing out of it as it was formed. I think the condition of the pancreas, as disclosed by the autopsy, a recent affair. Thinks he fell a victim to living in violation of physiological laws. Did not take the physical exercise which was required to keep his body pure.

Dr. Gallagly differed from the President. It seemed to him that the gentleman's death was purely accidental. Thinks that it was due to sudden stoppage of the gall-duct, for, in two days after his colic he is jaundiced, and the bile is reabsorbed, and was the immediate cause of the first of the train of phenomena which ended in his death.

Dr. Larzelere thinks that Col. Allison did not present the condition of physiological life in any of his structures, but he did present all the essential conditions for fatty substitutions—to the formation of gall-stones—before death. Does not like the words "fatty degeneration." Authorities at the present day use the word substitution, which exactly presents the facts, viz., the substitution of tissue of lower dynamic capacities for that of higher, at important points in the body. Does not think the conditions of structure disclosed at the post mortem were brought about in a short time; probably one, two, or more years.

Dr. McElroy read a report from the London Lancet of recent experiments in Europe of tying the gall-duct. It was found that when the duct was obliterated by ligature, fatty substitutions and other structural changes could be noticed in the liver in twelve hours. Thinks that the phenomena presented at the autopsy of Colonel Allison all recent, and dependent on the obstruction of the gall-duct; though, as he had said before, the nervous apparatus and lymphatic system were in fault primarily.

Dr. Holden thinks, like one of the members who has already spoken, that there is not much left on the subject not embodied in the report of Dr. Edwards. It gives, 1st, a his-

tory; 2d, a post mortem. The patient had a fit of colic; was relieved; then had jaundice; got well. From some unexplained cause indigestion comes on, followed by rapid sinking and death. Thinks the fatty degeneration not recent. Nobody could have cured him. Overloading stomach brought on inflammation, which terminated in death.

Dr. Nye has tried to analyze all that had been said to find something new or useful. Thinks that what was read from the *Lancet* the only new thing. Would the members like to know how Col. Allison ought to have lived, so that he would not have died of that disease? Why, earn his living by the sweat of his brow; eat plain food; use cold water; by baths, etc. So living, he would not, in all probability, have had gall-stones. But he lived otherwise, and did not take exercise enough.

Dr. Holston remarked that it was by studying such cases as that reported by Dr. Edwards that we can know when we have such cases to deal with in actual practice.

Dr. Larzelere thinks it very important and satisfactory to be able to state the exact condition of things in patients to friends.

Dr. Holston moved that the thanks of the Society be tendered Dr. Edwards for his paper; which was adopted, and the paper received.

CORRESPONDENCE.

VIENNA, AUSTRIA, November, 1876.

DEAR DOCTOR: In accordance with your kind request, I will attempt, in a few letters, to give a description of medical matters in Vienna.

The University buildings, proper, are situated in the center of the city, jammed in between an old church on one

side and old and ugly houses on the other, at the end of a narrow alley, left only as an approach to these buildings. Here the philosophical and juristical faculties hold their lectures.

Medical lectures are held at the Zootomic Institute; the Allgemeine Krankenhaus, with which the Anatomic-pathologic and the Pathologic-chemic Institutes are connected; the Schola Anatomica et Chirurgica, also connected with the Allgemeine Krankenhaus; the Rudolf's Stiftung; the Polyclinic, and at several charitable institutions.

The Zootomic Institute contains the physiological laboratories and a few dissecting rooms, together with the University fencing school. It is a large, old, two-story building, formerly used as a gun factory, and still called "Die Alte Gewehr Fabrik." This is a rough shell, containing the golden fruit, and a very rough shell it is, too. The lectures on physiology, pharmacology, history of medicine, etc., are held at this place, while the clinics and lectures for the more advanced students are chiefly held at the Allgemeine Krankenhaus, which deserves a more extended description.

The K. K. Allgemeine Krankenhaus, the main city hospital of Vienna, is said to be the largest hospital in Europe. The buildings occupied by it are of three dates of construction. The hospital was opened in 1784, in a building formerly used as an infirmary, and founded so early as 1693, though not fully completed until 1769. It was then adapted to contain two thousand beds. The large circular building, the former lunatic asylum, now used as a store-house and residences for the attachés, also dates from this time. The first addition was made in the years 1832-34, at a cost of \$200,000. The last important addition was made by the building of the magnificent dead-house, containing the Pathologic, Anatomic, and Chemic Institutes and Museums, which were opened in 1862. The really poor are admitted to the hospital free of charge, while those who can afford it

are required to pay a small charge. An ambulance is also connected with the hospital, and medicines are furnished to the out-door patients free of charge.

The foundling and lying-in hospitals, together with the lunatic asylum, were formerly connected with the Krankenhaus, but were, in 1865, transferred to another board, and the buildings occupied by them were converted to the uses of a general hospital.

This hospital, from the first, was made use of for the purposes of medical and surgical instruction. There are, at present, ten clinics held at the hospital, for the use of which there are forty sick-rooms, containing seven hundred and eighty-four beds. Besides these, there are eight special clinics, having the advantages of sixteen rooms, with three hundred and fifty beds. On account of the establishing of so many clinics, many rooms originally intended for the use of the sick were converted into lecture-rooms. It is owing to this circumstance that, notwithstanding the various large additions, the hospital still contains only the same number of beds (two thousand) with which it opened. The material at the Krankenhaus is also used by a number of physicians, not directly connected with the institution, for private courses of lectures. In 1873 not less than sixty-one persons instructed at the institution. It follows that this must be called a public hospital, serving mainly the purposes of instruction, in which persons of both sexes, from five years upwards, are admitted, while children under that age are received at the St. Anna Hospital, an institution also under the control of the Krankenhaus.

More or less closely connected with the Krankenhaus are the hospital in Wieden, a sub-district of Vienna, and the Rudolf's Stiftung, the one containing six hundred, the other eight hundred and sixty beds.

The immense buildings of the Krankenhaus are so constructed as to inclose thirteen large court-yards, nearly all

planted with trees and shrubbery, decorated with fountains and statuary, and converted into park-like gardens, which, with the buildings, occupy an area of 961,848 square feet, of which 228,600 are covered by buildings and 733,248 by the yards and gardens.

The Krankenhaus is situated near the heart of the city, but the disadvantages arising from this are so nearly neutralized by the extensive growth of trees that, according to ozonometric observations, the air does not leave any thing to be wished for as regards purity.

The old part of the building is two stories in height, the newer part three stories, and both are not only not pretty, but exceedingly plain, not to say ugly structures. The newest part is a very fine building, two stories in height, and well adapted for the purposes it is intended to serve.

The hospital contains one hundred rooms of different sizes for the use of the sick, exclusive of lecture-rooms, rooms for assistants, and so on. The height of the rooms is from twelve to thirteen feet, and the space for each bed is about 1250 cubic feet.

The medical staff numbers twelve division and eleven clinical supervising physicians, forty regular physicians and sixteen assistants, the director of Pathologic-anatomic Institute, with two assistants, and the director of the Pathologic-chemic Institute, with one assistant—eighty-four in toto—receiving from two hundred dollars, with board and lodging, to one thousand dollars per annum. There are also one hundred post-graduates in general and sixteen in special operative training.

I would like to give a description of the interior arrangements, but as this letter is already of some length, I will forbear for the present.

Respectfully,

A. M. B.

NEW YORK, January 16, 1877.

DEAR DOCTOR: Through some oversight or other, an interesting item which I intended to bring to the notice of the profession in this country has been omitted in the last issue of your esteemed Journal. I refer to that part of my communication which contained a short mention of a new method of treating tuberculosis of the lungs in its advanced stages by the injection of a one per cent. solution of carbolic acid into the lung tissue, through the chest walls, by means of a praxax hypodermic syringe. To my friend and former class-mate, Dr. J. Schnitzler, of the Vienna University, belongs the credit of having introduced this method into practice with marked benefit to his patients. He injects of the solution named one-half a syringe-ful every day or every other day, and reports, thus far, of being pleased with the results obtained. I will enlarge upon this subject on some future occasion. I wish gentlemen having such cases under treatment would give this method a trial, and let us know their experience with it. In a disease like tuberculosis of the lungs, which carries off annually hecatombs of victims, nothing should be left untried which promises, even in a small degree, to be of advantage to the unfortunate sufferers thus affected. Dr. Schnitzler was formerly first assistant to the lamented Professor Oppolzer, and is at present lecturer, on the diseases of the chest and the throat at the University mentioned; and, at the same time, he is the able editor of the *Wiener Medizinische Presse* and the *Vienna Clinic*. The professional reputation of this excellent author, lecturer, and editor is such that whatever he states he does after careful examination, deliberation, and experience. It is therefore my firm conviction that the widest publicity should be given to his new method of treating one of the most intractable diseases known in medical practice, being based upon the observation and honest statement of an acknowledged medical authority. Another point of great interest—proving

the efficacy of the disinfectant treatment of diseases depending on certain germs floating in the atmosphere, and capable of developing only under certain climatic influences, and coming in contact with the proper soil favorable to their development, as fully proved, and only doubted to-day by the less advanced and often unsophisticated youths in the profession—is the communication made by one of whom we, as Americans, are proud, on account of his triumphant innovations and brilliant achievements in the art of gynecology, and his justly acquired world-wide reputation as a careful observer. (I mean Dr. J. Marion Sims, of this city, who published his experience with Lister's antiseptic method in ovariectomy in the New York Medical Record of December 9, 1876.) This eminent surgeon says: "Professor Lister's late visit to this country seems to have given a new impulse to *antiseptic* surgery. Van Buren has adopted it with success, and is lecturing on it to his class at Bellevue with great enthusiasm. Stephen Smith has also adopted it with the same success, and is teaching it most earnestly to his class at the University, and other surgeons *must* take it up." Dr. Saas kindly consented to bring his apparatus and apply the carbolic spray to Dr. Sims's case for ovariectomy. Professor Thomas, of New York, and Dr. Atlee, of Philadelphia, had both seen the case, and advised the patient to wait until the tumor (ovarian cyst) became so large that it would cause her to vomit her food and began to emaciate. The tumor weighed at that time ten pounds; but she being very anxious to have the operation performed immediately by Dr. S., it was done on November 23d last. "I am particular," says Dr. Sims, "in fixing the date, because I believe it inaugurates a new departure in ovariectomy." Dr. Sims, with his usual painstaking accuracy, goes on to relate the mode of operation under the carbolic spray, which lasted forty minutes, and could have been continued two hours if necessary. The pedicle was very short, and at least three inches broad. The

external incision was closed by sutures, and a carbolyzed dressing applied. The pulse never rose above 90, nor the temperature over 101° Fahrenheit. Convalescence was fully assured in forty-eight hours, and the patient is now quite well. The tumor weighed fifteen pounds. Dr. Sims concludes by saying: "I urge the adoption of Lister's antiseptic method in ovariectomy, which I am sure will prove as valuable in this operation as it has been in general surgery. Dr. Sass's apparatus answered admirably."

Here, Mr. Editor, we have the testimony of some of the ablest men in our profession on the two continents of Europe and America—Schintzler, of Vienna, and Sims, Van Buren, and Stephen Smith, of New York, using carbonic acid with such remarkable results in two of the most formidable diseases known in medicine and surgery. Does this not prove the correctness of the *germ theory* of many diseases to which flesh is heir? Does it not prove the correctness of my disapprobation of the action of the surgical section of the International Medical Congress, held in Philadelphia September last, regarding Lister's method of treating wounds, expressed in my letter to you which appeared in the October number of the Journal? Antiseptic surgery has already stood the test of time. It has the approval and is the favorite method of treatment of the leading men in the profession in Europe. Thiersch, Volkmann, Billroth, Hofmokel, Dumreicher, and Esmarch are among those who claim that it is the only safe method of treating wounds of any magnitude. I am glad to see that the same view of its efficacy is held by leading men in our country, and I hope it will soon be the practice of all. It would be waste of time and of valuable space in your journal to illustrate by the enumeration of single cases the great value of Lister's method of treating wounds. I could myself cite a very considerable number of cases—desperate as they were—which have been successfully treated, in a comparatively short space of time, by me and my col.

leagues in the out-door department of the Mount Sinai Hospital and the Eastern Dispensary in this city. But every medical journal contains accounts corroborating my statement in regard to the high value of Lister's method, and I consider it superfluous to say another word about it.

The New York Pathological Society presents a larger field for study and useful information to the medical student than perhaps any similar society in the country; its meetings, therefore, are always interesting, and its proceedings deserve the widest publicity. I shall attend its meetings regularly, unless otherwise engaged, and give you a sketch of the points that in my judgment may be of interest to the readers of your journal.

November 8, 1876. No. 1. Dr. Sands presented a mammary tumor. The growth had existed three years before removal. It commenced in the shape of a small swelling, grew slowly until six months previous to the operation, when it grew rapidly and was very painful. The tumor was not adherent to the underlying tissues, and fluctuated when pressed upon. The nipple was not retracted. The Doctor thought at first it was a chronic abscess; a hypodermic puncture was made, and a reddish, clear liquid was withdrawn. The lymph-glands were not enlarged, and there was no cachexia. The tumor was tapped and four ounces of liquid were withdrawn; the remaining hard portion was extirpated. The mass removed showed a cheesy degeneration. There was no cyst-wall. Formerly such tumors were called encephaloid. Dr. S. pronounced it an adenoma, with cystic degeneration. The specimen was referred to the Committee on Microscopy.

No. 2. Dr. B. Robinson presented small parts of an epithelioma removed from the larynx of a patient thirty-one years old. The tumor grew eighteen months before removal.

No. 3. Aneurisms of the arch of the aorta, with erosions of the sternum, clavicle, and first rib. The specimen contained bone in the sac, and was interesting on this account as a rare

pathological specimen. Dr. Janeway stated that there were several such specimens in the Bellevue Hospital Museum. Drs. Dickson and Packard have reported similar cases.

No. 4. Cirrhosis of liver, by Dr. Loomis, from a patient thirty-four years old. The disease lasted four years, when it killed the patient. Vomiting, fever occurring in paroxysms every three or four days, with decided chill, and emaciation, ascites, nasal and bronchial catarrh, were the accompanying symptoms during life, for which the appropriate treatment had been resorted to; but although temporary relief by tapping and tonics was obtained, still the patient died finally from exhaustion.

Dr. Sayre exhibited a button removed from the nose by means of Mr. Durham's forceps, of Guy's Hospital, London. Dr. Sell related cases proving the great difficulty of removing foreign bodies from the nasal cavity, and hoped the instrument would prove useful in the future as it had been in Dr. Sayre's case.

At the annual meeting of the New York County Medical Society, Dr. H. B. Sands in the chair, an important resolution was passed, which should be adopted by all the medical societies in the land. I have urged the introduction of the metric system of weights and measures, in a letter published in the Boston Medical and Surgical Journal, which I wrote from Vienna, Austria, in 1874. The resolution above referred to and my recommendation were to the effect that physicians should use the metric system of weights and measures in their prescriptions. Italy, Germany, and Austria have made its use a law; ounce, drachm, scruple, and grain are denominations of the past in those countries. A few days ago I noticed in the New York Herald that the Secretary of the United States Treasury recommends its introduction in all the United States custom-houses. It requires, therefore, I think, no argument on my part to prove its simplicity and usefulness. In our monetary system we

have the decimal system. This being most convenient and practical, I hope it will soon be used also in writing our prescriptions on this continent. Those using the metric system will be gratified for having made the change for the better.

Very truly and respectfully, yours,

DR. RUDOLF TAUSZKY.

The American Medical Bi-Weekly. E. S. GAILLARD, Louisville, Kentucky.

This is the changed form of the American Medical Weekly, and we think the change is decidedly one for the better. In its present form it is a very interesting and attractive journal, one of the best of its class in the whole country. Its editor evidently understands how to conduct an attractive and successful periodical, and gives a brightness and variety to his pages which make it a welcome visitor both to the busy and the studious practitioner.

If it were not for one thing our praise would be unqualified, but this can never be while Dr. Gaillard clings to the abomination of pink paper, for which he seems to have an unaccountable craze. This is a sad eyesore in an otherwise well got-up, as well as well conducted periodical, which we yet hope to see abolished.

EDITORIAL.

The recent appointment by the trustees of the Asylum for the Insane, at Athens, Ohio, to the position of Medical Superintendent, of a person not a resident of the State of Ohio, and recently connected with a so-called surgical institute of doubtful character at Indianapolis, has given rise to a great deal of very warm discussion, both in medical circles and in the public prints. It is claimed that the appointment is illegal, and therefore null and void, and we believe that steps have been taken to have this aspect of the question brought before the proper legal tribunals for settlement. On this point, having no knowledge, we can have no opinion, and therefore shall say nothing—it is for the courts to decide. It is furthermore said that the appointment of this man, so recently one of the managers of an ill-odored, pseudo-medical speculation, is a deliberate and intentional insult to the regular medical profession. We very much doubt whether this allegation can be sustained. Most probably these trustees had not the remotest idea that such an interpretation could be put upon their action. They, like the rest of the world, are most likely utterly indifferent to the issues between the regular profession and those whom we denominate outsiders and irregulars.

They can not see the difference, and believing that they never will see it as we do, we shall not enter the lists in a Quixotic attempt to enlighten them, but leave them to the blindness of eyes and hardness of heart which is their natural condition. The most charitable, as well as, it seems to us, the most natural, explanation of their choice is that they were influenced by purely personal motives.

Enough of their number were interested in Dr. Wilson—we believe that is the fortunate applicant's name—to out-vote or over-influence the rest, who cared little about the matter, one way or other; and so the appointment was secured.

This supposition, which we presume to be in the main correct, and to do injustice to no one, is sufficient, without impugning any one's motives or conduct, to condemn, not these particular trustees, but the whole system of appointment and medical management of our insane asylums.

In the first place, the remuneration of the medical superintendent and his assistants is ridiculously and penuriously low, inadequate, and ruinous to the true interests of these institutions, as well as a disgrace to the great and powerful commonwealth of Ohio.

An enormous asylum has just been finished near this city of Columbus, and a medical superintendent appointed. Let us ask what qualifications ought reasonably to be expected of one occupying such a position?

We believe the following requisites will not be pronounced extravagant or unfounded: He should be a man of good general education, and of decided talent; he should be a thoroughly educated physician, furnished with well-digested knowledge, brought up to the most modern standards in all branches of his profession, and, in addition, to some extent at least, an expert or specialist in the most difficult and recondite branch of medical science, insanity; he should be possessed of force of character and executive ability sufficient in other departments of life to conduct, successfully, a large business, command an army, or govern a state. And for all this we propose to pay him the pitiful sum of twelve hundred dollars, and his assistants less sums, in rapidly diminishing proportions. This proposition is so utterly preposterous on its face that no one can for a moment doubt that, leaving exceptions out of sight, the general result must be that we do not secure for the medical headship of our asylums such men as they should secure. This is the result, and it is right that it should be so. Men properly qualified, and aware that in general practice, or in other walks of life, they can command success in all the forms in which it is dear to the heart of man, will not, and ought not, to immure themselves in an asylum for the bare privilege of living.

These magnificent and costly structures, of which we are so proud, and to some extent justly so, do not fulfill all their mission, nor fairly pay for the outlay involved, when they are simply *asylums*, or retreats, for this afflicted class of our fellow-men. High and holy as this mission is, they have one higher and better still. It is, that they should be great schools for the study of this dreadful and mysterious visitation of humanity, and thus give new weapons to the beneficent art of medicine with which to combat it. This the asylums of our own country have not done to any adequate extent. Great improvements have recently been made, and are constantly being made, in the pathology and philosophy of insanity, which may be hoped in time to make its cure and prevention more easy and secure. But the bulk of this work has been done abroad. The reproach that we have no medical literature has, in other departments, long been done away with; but here it is still too well deserved even yet. Who can believe that this is for want of talent and learning on this side of the water? Not we. Who can believe that the genius of Americans, which has triumphed over so many obstacles in the pathway of the healing art, and introduced so many improvements in every other department, can not penetrate the darkness of this one? Not we. No, we believe that this state of facts is largely, if not entirely, owing to the niggardly manage-

ment of our asylums in the particular we are discussing. The public always has been, and still is, systematically unjust to the physician, and were it not that humanity forbids, we should say it was only just that it should reap its reward in the shortcoming of physicians and the medical art. Insanity can not be successfully studied except in large asylums. Only here can sufficiently numerous examples be brought together to afford the necessary material for the comparison and analysis that must precede all safe and useful generalization. Insanity can not be successfully studied except by men who, having the opportunity, have also some special aptitude and preparation for the work.

The student here needs a large amount of general knowledge, and a liberal training that shall fit him to apply this knowledge to the solution of a most difficult set of problems. Mere knowledge, without mental power and training, is like a Damascus blade in the hands of a clown. He needs especially to be expert in the niceties of pathology and in the use of the microscope. Such men should be at the head of our asylums. Such men, in addition to the work they do themselves, are a wondrous power in directing and inspiring others. Such men, as a rule, we shall never have while present views and principles prevail in the management of our asylums.

The position of superintendent ought not to be a comfortable place of retirement for the disabled and worn-out members of the profession, but a field for the exercise of the best powers of our best men in the midst of their best days. To secure such men the compensation must be more commensurate with the labor and responsibility involved.

Our legislators ought to be ashamed, and we, as citizens, ought to blush at the present pitiful prices at which we strive to purchase service that can scarcely be over-paid at any price. And as long as we do it we shall reap in accordance with a law we can no more set aside than we can the force of attraction—poor pay, poor work. Further, we believe that these appointments ought to be made in an entirely different manner from that at present adopted. A board of trustees—upright, honorable men, good business men, but with no special knowledge to enable them to discriminate among a crowd of applicants—have the unfair and unpleasant duty thrust upon them of choosing simply from outside information, which, however carefully and conscientiously made use of, can never guard them against many errors in their appointment. There should be a competitive examination for these places, and those applicants who pass the best examination in general medicine and the specialty of insanity, before a competent and properly appointed examining board, should have the places. Nor do we see that there is any good reason why this examination should be confined to residents of the State.

REVIEWS.

A Practical Treatise on Diseases of the Eye. By ROBERT BRUDENELL CARTER, F. R. C. S., etc., etc. With One Hundred and Twenty-four Illustrations. Edited, with Additions and Test Types, by JOHN GREEN, M.D. Philadelphia: Henry C. Lea. 1876. pp. 505.

This volume embraces in substance the lectures given by the author at St. George's Hospital. It is not by any means an exhaustive treatise on the subject. In fact, the author disavows, in the preface, any attempt to achieve that kind of completeness which is produced by undigested compilation. Our acquaintance with the work is derived mainly from a perusal of the English edition; and some of the faults of the book, which we observed and noticed in a review of this edition, have been pointed out by the American editor.

But with all its faults (and they are, in our judgment, somewhat numerous) we prefer the original book, and are at a loss to see what it has gained by the work which Dr. Green has undertaken. In preparing the American edition, Dr. Green has corrected such typographical errors as were noticed, and such others as were not noticed. A few short passages disconnected from the immediate subject-matter have been omitted. Some of the drawings have been corrected; two substitutions have been made, and eighteen additional cuts have been introduced. The lithographed plates, also, have been reproduced as wood-cuts. The notes and additions to the text by the editor, which are included within brackets, are rather numerous. A sheet of test letters is given at the end of the volume.

This, as the editor says in his preface, is what constitutes his part of the work, which, while it has no doubt been a considerable labor, does not seem to us to have been a necessary one.

The first five chapters in the book are taken up with what may be called an introduction: I. "Anatomy and Physiology of the Eye"; II. "On the Examination of the Eye"; III. "The Ophthalmoscope and its Application"; IV. "The Principles of Ophthalmic Therapeutics"; V. "The Principles of Ophthalmic Surgery." The remaining chapters, ten in number, are devoted to the different affections of the eye. The anatomy and physiology are very briefly considered, and the anatomical descriptions are not always correct—a fact which the American editor does not fail to frequently indicate.

Thus the author says, p. 18, that "the ducts of the lachrymal gland

open upon the internal surface of the outer part of the upper lid"; the inclosure in brackets that [The ducts of the lachrymal gland open into the conjunctival sac, a very little distance in front of the fornix. Merkel, Græfe, and Sæmisch: *Handbuch der Gessam. Augenheilkande*, 1, 1, p. 89.]

On the same page the author says: "The globe of the eye, or eyeball proper, is composed of a protective envelope or sclerotic coat, the anterior transparent portion of which is called the cornea." But he is correctly informed by a foot-note of the editor's, that [Only the posterior non-transparent portion of the *tunica externa* is called the sclerotic, or sclera.] It would be quite impossible for us to even indicate the number of such corrections as these which are introduced, nor would it subserve any good end. It is tiresome even to notice them all in reading the text. The methods of examining the external tunics of the eye, together with functional tests, acuteness of vision, visual field, tension, etc., are treated of in a concise and interesting manner.

A decided preference for his own instrument, "perhaps from parental partiality," for measuring the visual field is admitted; and we are inclined, from the description given of it, to think that it is the most convenient instrument yet given to the profession for that purpose, but still prefer ourselves, for most purposes, an ordinary blackboard, or the simple movements of the hand in different directions, while the patient looks steadily at the eye of the surgeon. In speaking of the ophthalmoscope, Mr. Carter credits Mr. Babbage with having constructed the first ophthalmoscope as a purely optical problem; but, unfortunately, he placed it in the hands of an English ophthalmic surgeon, who did not appreciate the importance of the means of observation thus afforded, and left its introduction to Helmholtz and Græfe, four years later. Dr. Green says in a foot-note: "It does not appear that Mr. Babbage suggested any thing more than a mirror with a hole in it—a contrivance by which the pupil may be lighted up, as in Cummings's or Brücke's experiment, but which affords a view of the details of the fundus under exceptional conditions only." The theory and application of the ophthalmoscope are very simply and ably presented. Mr. C. sometime since showed his familiarity with this subject in his translation of "Zander on the Ophthalmoscope." Dr. Green has substituted, in fig. 32, a new and improved model of Loring's ophthalmoscope for the older form given by Carter, and re-written a portion of the description to accord with the changed wood-cut. He might also have added a cut of Dr. Knapp's latest model, which is altogether omitted by Carter.

Chapters IV. and V. are the most interesting and instructive in the whole book. It is a stricture commonly applied to specialists, and with a good deal of reason, that they do not sufficiently study therapeutics.

The tendency of ophthalmologists is to consider nearly all affections as of local origin; but Mr. Carter goes into the remote origin of eye diseases (we are inclined to think goes rather too far in speaking of the derangement of nervous function), and gives some excellent rules for the administration of drugs.

The chapter on "The Principles of Ophthalmic Surgery" is full of valuable hints, which are applicable to operations on the eye in general, and shows that the author has given much time and painstaking to this most important branch of surgery. He considers, first, the mechanical acts to be accomplished, and the difficulties which lie in the way of their performance; and, next, the training of the hands to their duties. If it were possible to become a good operator from reading any rules, such plain, practical directions as are here given would enable one to excel. But, as the author forcibly and truly remarks, "it is impossible to acquire manual dexterity merely by watching others, partly for the reason that the facile working of a finished operator conceals from spectators the difficulty of that which he accomplishes. His skill is like the simplicity of perfect English composition, which, as Dugald Stewart long ago said, "induces the reader to think that he also could write in a similar manner."

Mr. Carter condemns, in very strong language, the invention of many instruments by a surgeon, which, he says, "as a rule, may be accepted as sufficient proof of his clumsiness. The safest man is he who never invented an instrument in his life, but whose daily practice affords evidence that he can use those which have been invented for him by others." This is unpleasant reading for those who think the chief end of the surgeon is to modify and make instruments; but we think there is a good deal of truth in it.

We are pleased to see that ether is recommended as an anæsthetic, and that the credit of its more general introduction into England and demonstration of the proper mode of administration is accorded to Dr. B. Joy Jeffries, of Boston. We think that Mr. C. is too positive in his views of the necessity of the administration of an anæsthetic in eye operations. Our own views are more in accord with those of Dr. Green, "that with patients of average self-control most operations, including iridectomy and cataract extractions, may be performed as safely and as well without anæsthesia as with it. The question of the administration of an anæsthetic—and we agree with the author in preferring ether—may be decided in each case for itself, as the good judgment of the surgeon may dictate."

In the chapter on the Eyelids, when speaking of the use of sutures, Mr. C. recommends the use of very fine platinum wire, or, when this is not at hand, human hair. Dr. Green has inserted a note, in which he says very fine black silk is an entirely satisfactory material for sutures, whether in

the conjunctiva or skin of the lids; and we agree with him. The very best silk is the so-called China bead black silk, and wire or hair is superfluous. In the chapter on Conjunctival Diseases, considerable space is given to the consideration of contagiousness of trachoma and other forms of conjunctivitis in crowded institutions. The author has made the causes of outbreaks of purulent ophthalmia in several such institutions a special study, and recommends a systematic disinfection of buildings and their contents where such diseases prevail, and that particular care should be given to ventilation. Mr. Carter amazes us when he says that pterygium is scarcely at all amenable to treatment, and recommends letting it alone, unless it extends so far over the cornea as to obstruct vision, when iredeotomy is to be performed. This advice we hope no one will follow. It is true that mere excision of the growth is apt to fail, but if the defect left after its removal be covered with healthy conjunctiva, as recommended by Alt, or the transplantation operation advised by Knapp, it does not usually return. Dr. Green dissents from this opinion, and describes Alt's operation. Dr. Green has added to this chapter a classification of the ophthalmia, as found substantially in all the systematic works on the diseases of the eye; and we agree with him that, whatever may be our views regarding the pathological unity of the several forms of inflammation of the conjunctiva, such a classification is not the less useful and convenient. The author recommends discission, combined with suction, for all cases of cataracts in patients under thirty, except infants, and those cataracts which have undergone liquefaction. Here, again, we must disagree with him. Discission alone may be employed in soft cataracts in infants or young persons, but in adult patients we should prefer extraction. The suction instrument we look upon (as we do all instruments inserted into the eye) as very dangerous, and its use is now pretty generally abandoned. Mr. Carter condemns transverse corneal sections in the extraction of cataracts, and is a strong advocate of V. Graefe's method.

The most incomplete and unsatisfactory chapter in the book is that on the Diseases of the Fundus Oculi. In administering strychnia for atrophy of the optic nerve, Mr. C. says he is in the habit of trusting the use of the hypodermic syringe to some member of the patient's family. We should be sorry to follow his example. In regard to power of tobacco and alcohol to produce amblyopia and amaurosis, he is a disbeliever, except in so far as every malady which assails a drunkard is probably in some remote degree due to his vice. The views which are commonly entertained by practitioners are not in accord with this statement, and Dr. Green gives, in a foot-note, what are the more generally accepted opinions in this country—with which we agree.

We think extremely is too strong a qualifying adverb to use as to the rarity of choroidal sarcoma. Such is not in accord with clinical experience here or abroad, if we judge from the testimony of writers.

After enucleation, the advice to plug the orbit for a few hours is given. We have never found it necessary to resort to such measures to control hæmorrhage, which may generally be accomplished by exposing the parts to the air for a few minutes before applying the bandage. Want of time and space precludes us from referring to the remaining chapters of this book. Dr. Green has made some very considerable additions to the chapter on Refraction.

We conclude by recommending all who may be interested in this branch of surgery to read this book; but if they are of the same mind with us, they will prefer the English edition. This is said not with a desire to detract from the merit of Dr. Green's revision, for many of his additions and corrections are such as we had mentally made for ourselves while reading the book; but the frequent interpolations in brackets and the numerous foot-notes spoil the book, and we prefer to make our own corrections.

T. R. P.

The Electric Bath: Its Medical Uses, Effects, and Appliance. By GEORGE E. SCHWEIG, M.D. New York: Putnam's Sons. 1877.

This is an extremely interesting and suggestive little book. It is well and modestly written, and will, no doubt, arrest attention, and probably meet with a very varying reception from different readers. Some, who, for want of proper acquaintance with the present status of electro-therapeutics, or through want of success in their own imperfect and ill-directed efforts in this direction, have formed a prejudice against the whole subject, will turn from it with indifference. Others, who have been already convinced that much of great value has been ascertained in this department, and that much more remains to be discovered, will give it respectful attention, and, unless we are mistaken, will be well rewarded therefor.

The objection against other electro-therapeutical appliances, that they demand too much time and attention for the average practitioner, may be still more strongly urged against this. But in cities where certain persons can make it worth while to devote themselves to them, they will be more and more constantly used. We are sorry the author did not see fit to illustrate his apparatus with cuts.

Chemical and Microscopical Analysis of the Urine in Health and Disease. Designed for Physicians and Students. By GEORGE B. FOWLER, M.D., etc. Second edition. New York: Putnam's Sons. 1877.

We are glad to see a second edition of this excellent little manual. There are, to be sure, several others on the same subject, such as Flint's,

Tyson's, etc., each good in their way, each, perhaps, in some respects superior to this. But, on the whole, we like Fowler's the best. It fulfills more completely the purpose of a simple guide to the few necessary manipulations and determinations that concern us all, without redundant or extraneous matter.

The present edition adopts the metrical system and the new chemical notation, which, though harsh and strange to the mass of the older men in the profession, will be, ere long, the universal media of expression in their departments, and should be learned by every student.

It is a beautifully got-up little book, and we should like to see it in every student's hands, and on the office table of every practitioner in the land.

A Practical Treatise on Diseases of the Skin. By LOUIS A. DUHRING, M.D. Philadelphia: Lippincot & Co. 1877.

The excellent paper, and large, clear type of this book tempt one at once to read it, and once they begin, it is no task to read on, for the plain, concise way in which every thing important is stated, the simple excellence of the style, and evident mastery of the author over his subject, make the book an increasing pleasure from beginning to end. As a text-book for students, or for the ordinary physician, who only wants one book on the subject, we have never seen the work on diseases of the skin that equals this one. Treating as it does of every thing that comes within the range of dermatology, it necessarily treats some things very superficially, and omits much that is of interest, but we believe nothing important. The classification, which is essentially that of Hebra, we believe to be the best possible in the present state of the science. Dr. Duhring has shown throughout his work a thorough personal acquaintance with these diseases, an intimate knowledge of their literature, and a power of elegant condensation which places him high in the rank of medical authors, and deserves the thanks of the whole profession for the clear and attractive form in which he has presented a subject too often made difficult, and almost repulsive, to all but specialists.

Epitome of Skin Diseases, with Formulæ for Students and Practitioners. By TILBURY FOX, M.D., etc., and T. C. FOX, B.A., etc. Philadelphia: Henry C. Lea. 1876. 12 mo. pp. 120.

This belongs to a class of books which we heartily wish had never been made. To those who go to it without previous acquaintance with the subject it is likely to prove a source of confusion, if not of error.

To those who have a previous acquaintance with this branch of medicine it presents nothing but a barren, meagre, and unattractive outline. It may sell, for there are always some to be attracted by such cheap sub-

stitutes for real study, but it conveys the absolute minimum of useful information, and is a dangerous book for the young, who will be deluded into the belief, after reading it, that they know something of skin diseases, while they have only acquired a little extra facility in giving voice to their ignorance, and run the risk of being content therewith.

The Use and Value of Arsenic in the Treatment of Diseases of the Skin.
By L. DUNCAN BULKLEY, A.M., M.D. New York: D. Appleton & Co. 1876.

Dr. Bulkley is well known as an ardent and indefatigable student of Dermatology, and though somewhat over-prolific for a young writer, we have learned to look for something more or less worthy of attention from each fresh exercise of his pen.

The present brochure contains a tolerably good resumé of all that is known on the subject, without any thing particularly new or striking.

Still, we think this publication may not be without its use in directing the attention of physicians to a powerful remedy, too often, we fear, prescribed with the most reckless empiricism, simply because it is "good for skin diseases."

Dr. Bulkley concludes with a series of very prolix rules and principles, of which we fear it may be said the true are not new, and the new, if such there be, are not altogether true.

A Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra. By SAMUEL D. GROSS, M.D., etc. Third edition. Revised and edited by SAMUEL W. GROSS, A.M., M.D. Philadelphia: H. C. Lea, 1876.

Professor Gross has written many books, and all of them good ones, but, in our estimation, not one better than this treatise. And numerous as are the additions recently made to this department of surgery, we have never felt that any thing superseded this work, so long an American standard and classic. And now that we have it in a new edition, carefully revised, we feel that it can safely challenge competition with any of its successors. We have so thorough an attachment to the work in its original form that we confess to regret at parting with the introductory chapter on the anatomy of the urinary organs, and the closing one on the cause of calculous disorders; and yet we are fain to yield to the author's judgment in leaving them out, especially if the book thus lightened finds more purchasers and readers.

The department of the urinary organs is confessedly one of the most difficult in the whole range of surgery.

Nowhere else is such a constant spirit of innovation prevalent; every day almost sees some one coming forward with new views, new methods,

new instruments, or such as they think are new, though often they are but old things revived. Nowhere, therefore, has a writer more need of a wise and judicial conservatism than here, to avoid running after pretentious novelties merely because they are such, and at the same time to do justice to real improvements. And just in these qualities does Prof. Gross excel most surgical writers. Perhaps at times a little too conservative, he seems to be less faulty in that regard here than in most of his other writings.

Having long enjoyed an enviable reputation in the treatment of this class of diseases, and having had an enormous experience therein, he has seen the rise and fall of many novelties, tested the value of most new plans of treatment, and is a reliable guide for those who are just entering upon this department of practice.

The various forms of cystitis, with their results, first engage attention, and are well described, their remedies pointed out, indeed the whole subject well elaborated.

In the description of disease, Dr. Gross reminds one of the old masters in medicine. There is a fullness, and at the same time a finish, about his descriptions which show that they have been drawn with conscientious care, and each one is a picture complete in itself.

How different this is from much of the slipshod description that is finding its way into medical books.

The chapter on tumors of the bladder may be instanced as one of singular excellence.

Of course the whole subject of stone in the bladder is thoroughly dealt with, and yet here it is that we have the greatest fault to find. In his devotion to lateral lithotomy, the author is hardly fair to other methods of operation, and lithotripsy has hardly the attention paid to it that its importance demands. But, take it for all in all, we believe this book has no superior as a general treatise on the subject of the urinary organs.

Principles of Human Physiology. By WILLIAM B. CARPENTER, M.D., etc. Edited by HENRY POWERS, M.D., etc. A new American, from the Eighth Revised and Enlarged English edition. Philadelphia: H. C. Lea. 1876.

This edition of Carpenter's well known work on human physiology will give pleasure to multitudes of the friends of the work, who, having derived much pleasure as well as profit from it, would be loth to see it entirely superseded by more modern competitors for public favor. The recent development of physiology, and of its sister branches, histology, chemistry, and pathology, have been so great and so constant, that works on these subjects grow old, at least in some parts, almost before they are fairly launched upon the world. So that in a work like Carpenter's, which

has been for many years before the profession, there has been for some time felt the want of a new edition.

The present English editor seems to have done his duty very faithfully, and though we miss sometimes the smooth continuity of narrative so charmingly characteristic of Carpenter, we must be content if we receive in its stead a more thorough array of the rapidly accumulating facts of science. What an enormous labor the editor has had to perform in incorporating into the text the isolated discoveries and observations of various authors in the different departments of physiology may be partly gathered from his preface. Such editing is, indeed, a most arduous task, and one to which but few would aspire, for the reputation gained is by no means proportionate to the labor expended.

In this case, this work has been well and faithfully done, and no mean skill has been exhibited in introducing so much that is new, and leaving the work so thoroughly Carpenter's Physiology after all.

Among other improvements, some of the new wood-cuts deserve to be spoken of with high praise; and we would especially instance figures 75, 76, 83, 84, 157, and a multitude of others. 4

The paper and printing are worthy the well-established reputation of the famous publishing house by which it is issued.

A Series of American Clinical Lectures. Edited by E. C. SEGUIN, M.D. Vol. II., No. XII. Peripheral Paralysis. By F. T. MILES, M.D., Professor of Anatomy, and Clinical Professor of Diseases of the Nervous System in the University of Maryland. Putnam's Sons, New York.

This is the last number of the second volume of Dr. Seguin's excellent series of Clinical Lectures.

We feel that the profession of this country are under great obligations to Dr. Seguin for having undertaken, and so far carried on, this work, by which we have had given to us, from time to time, the experience and personal views of experts and teachers, on a great variety of important subjects, and in a fresh and striking manner.

A similar series, under the editorship of Professor Volkmann, of Halle, has been very popular in Germany, and has been thought worthy of translation by the New Sydenham Society. We think the American Clinical Lectures have been quite as good as the German.

The cost of each separate lecture is but small, thirty or forty cents, and the yearly result is a handsome volume, worthy of permanent preservation, and far more useful for reference than many of our ponderous textbooks; therefore we strongly recommend the series, and hope it will meet with a constantly increasing patronage.

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MEDICAL AND SURGICAL JOURNAL.

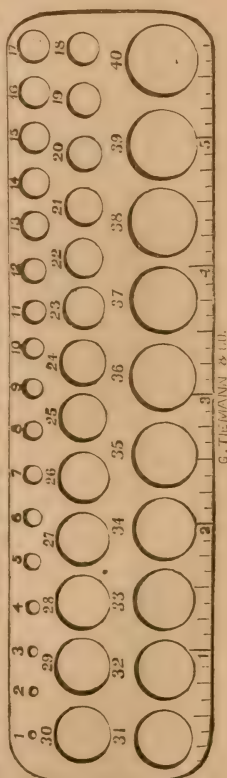
Vol. II. No. 2. Columbus, April, 1877. New Series.

ORIGINAL COMMUNICATIONS.

ART I.—A Description of the Instruments and Apparatus of the Author, with directions for their use in operations on the Genito-Urinary Organs. By F. N. OTIS, M. D., Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York.

The Urethral Scale.—This is graduated by the French millimetre from 1 m. in circumference to 40. On the opposite side are the numbers of the English scale. "The scale for grading the sizes of instruments has never been very accurately fixed, except in France."* The French scale (*Charrière's*) increases by one millimetre in circumference. This is a recognized standard scale in all countries, at the present day, and the sizes of all other scales must be translated into this, in order to become intelligible in descriptions of cases. It is not rare to find urethræ with normal calibre of 40. The entire set, from 8 m. to 40, is absolutely essential to every surgeon who desires to make complete and accurate urethral measurements. The stricture which will permit say 25 of this scale to pass without obstruction, will often hold distinctly and firmly upon a bulb measuring 26f. It is thus shown that the gradation of this scale is not too fine, and that no numbers can be dispensed with.

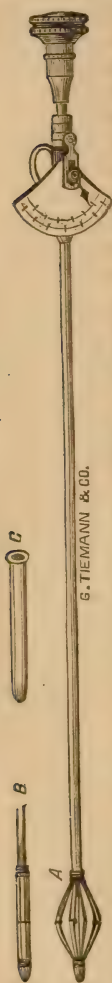
The Urethra-meter.—With this instrument an accurate measurement of the normal urethral calibre may be made, in any case, within the compass of the instrument, the bulb of which can be



*Genito-urinary diseases, Drs. Van Buren and Keyes, New York, 1875, p. 111.

made to expand from 20f to 45f.† The dial, near the handle, indicates, in millimetres, the exact amount of expansion of the bulb. Introducing it closed (and covered with the rubber cap, which serves to protect both the instrument and the urethra) down to the bulbo-membranous junction, by means of the screw at the handle, the bulb expands up to the point of the sensation of fullness felt by the patient. The hand on the dial will then point to the figure representing the normal calibre of the canal under examination. Strictures in the regions anterior to the bulb may also be accurately defined and measured by this instrument. When the bulb is suddenly arrested in withdrawal, the screw should be gradually turned until the bulb is permitted to pass. The position of the hand on the dial will then indicate the calibre of the stricture. It should, however, be borne in mind that, when the urethra is very sensitive, spasmodic contraction may simulate an organic stricture. It is, therefore, necessary to verify the results of this examination with the bulbous sound before deciding that true stricture exists. If the latter instrument defines a contraction at the same point, by measurement, and, when passed beyond it, is distinctly held on return, the proof of organic stricture is complete. When the urethral contractions are below the calibre of the closed bulb, or when they are numerous and close together, the normal calibre of the canal may be assumed from the circumference of the flaccid penis. When the circumference is 3 inches the urethra has a normal calibre of at least 30f; if $3\frac{1}{4}$ it will be 32f; if $3\frac{1}{2}$ = 34f; if $3\frac{3}{4}$ = 36; if 4 inches = 38; if $4\frac{1}{2}$ inches = 40, or more.

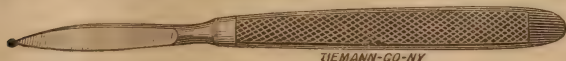
The Bulbous Sound.—This is intended solely for detecting the size, length, and locality of the urethral strictures. After ascertaining the normal calibre of the presenting urethra, a bulbous sound of corresponding size should be well oiled and presented at the meatus. If it passes in readily, this may be accepted as representing the normal calibre. If only a smaller size will enter, the difference between this size and that indicating the normal calibre will show



†Messrs. Tieman & Co have succeeded in making the Urethra-meter of a calibre of 12f, a fine instrument. Both Tieman and Otto & Sons make it of 18f, which is perhaps as small as is consistent with durability.

the exact amount of contraction present at this point. This contraction should be divided so thoroughly that the full-sized bulb can enter without the least sense of obstruction. The bulb should then be advanced along the canal. If deeper obstruction is met, a smaller-sized bulb should be selected, and when one is found which just passes the contracted point, slightly stretching it, on attempting the withdrawal of this bulb it will be firmly held by the posterior border of the stricture. The distance between the point of arrest of the large bulb and the point of holding of the smaller, carefully measured, will give you the position and length of the stricture, and the size of the smaller bulb will indicate its calibre. The same method of procedure will apply to the diagnosis of any remaining contractions of the deeper portions of the canal. In the curved portion the shaft of the bulb should be bent to correspond with the sub-pubic curve.

The Bulb-Pointed Bistoury, or Meatotome, is intended for



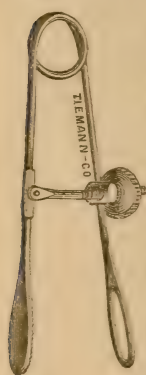
division of contractions at or within an inch of the meatus. This, well oiled, should be advanced into the meatus, while the end of the penis is supported by the fore-finger of the opposite hand, and carried along, with the bulb point bearing against the superior wall of the canal, until well behind the posterior border of the contraction. It should then be depressed, and the cutting edge drawn firmly and slowly down, cutting deeply in withdrawal, and carefully preserving the vertical direction of the natural orifice. The tissues in this locality are usually dense and resilient, and the firm support of the finger under the glans is required to effect a proper division, which should never be expected, or attempted, in a single cut. An incision having been made, its extent should be ascertained by the larger bulb, and if, as is more than probable, it fails to pass, or if, in passing, it is caught on return, the same proceeding should be repeated until the free passage of the full-sized bulb in entrance and withdrawal is secured.

The hæmorrhage following may be slight, ceasing after a few moments' pressure, or it may be profuse, requiring some mechanical appliance for its arrest. A short

Urethral Tube of silver or gutta-percha two m. below the normal calibre may be introduced and fastened by



means of a narrow bandage, the pressure of which, bearing upon the tube, will effect the desired result. The danger of free hæmorrhage is not past until healing of the cut surfaces is well advanced, and should be provided for in all cases for at least forty-eight hours.



The *Spring Tampon* may be conveniently used for the same purpose. It consists of steel or German silver wire, bent so as to form a spring with parallel arms, the upper of which is provided with a fenestrated end, which helps to hold the instrument in place, while upon the lower a little styptic cotton or lint is wound. The arms are approximated by a thumb-screw, until they readily enter the canal, to a point just behind the incision, when, by loosening the screw, the pressure just sufficient to arrest the hæmorrhage may be readily made.

The full-sized bulb should be passed daily, or at least every other day, until healing is complete. Should the least recontraction occur, it is an evidence that some fibrous bands have escaped division, and the operation must be repeated, if a perfect result is desired. The after treatment of a urethrotomy consists in keeping the divided tissues from reuniting, and this is most effectually done by the daily passage of a conical steel sound. For dividing deeper strictures, the simplest, and which answers a good purpose in dense narrow strictures, is the

Bulbous Urethrotome.—This in shape is like the bulbous sound, so constructed that, after passage through a stricture, a broad blade concealed in the bulb is drawn forward through the contracted point, by means of a handle which traverses the hollow shaft of the instrument. The blade is pushed back through the stricture into its place of concealment, and the instrument withdrawn; and if the bulb has been of sufficient size to make firm resistance, on attempted withdrawal *before*, and meets with none *after* incision, it is probable that the test by a bulbous sound of the size of the normal canal will show that the division has been complete. The bulbs of this urethrotome are readily changed, and range in size from 20f to 40f.

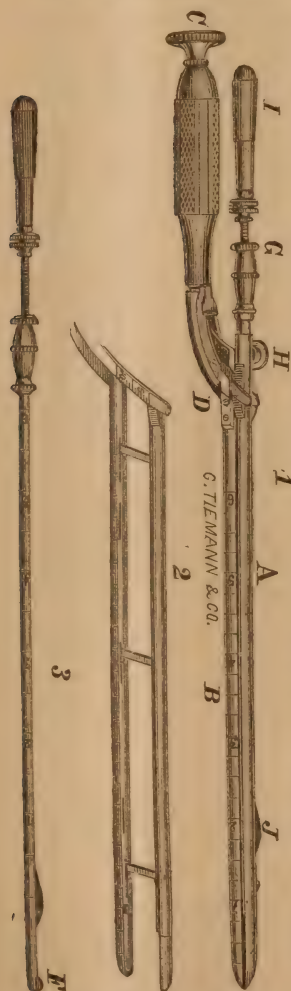


In order, however, with certainty to divide completely any stricture, by the internal method, the principle of dilatation (which, to a certain limited extent, obtains in the bulbous urethrotome) must be prominently combined with the incision, and this is best seen in the

Dilating Urethrotomes, of which there are four. No. 1 consists of a couple of parallel bars,

which are separated at will by means of a screw at the handle. The upper bar carries a canula, in which a narrow blade is concealed, and is made salient by being drawn forward, or pushed backward over a short elevation on the floor of the canula. The canula, being movable, enables the operator to elevate the knife at any point along the upper bar without moving the instrument. The bars when closed represent a size of 23f; when fully separated, 40f. The instrument is introduced closed; the bars are then separated by means of the screw at the handle, until the full size of the normal urethral calibre is reached. The blade, which has been previously adjusted to emerge at the point of stricture, is then drawn forward, and the stricture thoroughly divided. By loosening the screw which fixes the position of the canula in the bar, the knife may be raised and the canula drawn forward, thus cutting any desired distance. The amount of dilatation is registered on a scale near the handle. This is a strong, efficient instrument, but can not well be made of a less calibre than 23f.

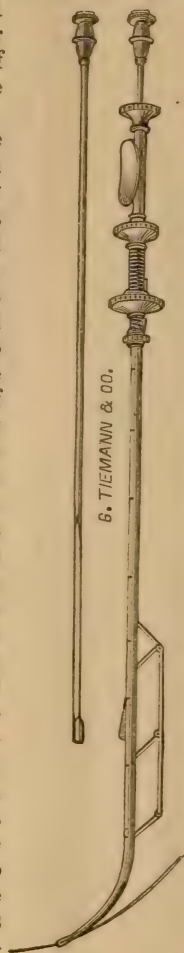
Dilating Urethrotome No. 2 is designed for a wider range of strictures. This, when properly made, may be closed to 20f and dilated to 45f. It has the further advantage of distending only a limited portion



of the canal contiguous to the locality of the stricture;

but the incision can only be made of one length, corresponding to the length of the bridge over which the blade runs. This, as usually arranged, is about one inch. The blades in this, and in the previously described, should be capable of projection, not less than one nor more than two millimetres. The amount of dilatation is indicated on a dial plate near the handle.

Dilating Urethrotome No. 3 should measure 18f when closed, and be capable of expansion to 45. It is curved so as to pass readily through the curved portion of the urethra when this is necessary. It is thus well adapted for the division of deep strictures. The cutting apparatus of this instrument differs entirely from Urethrotomes Nos. 1 and 2. In No. 3 the blade is guarded at the top like that of M. Maisonneuve, for the purpose of avoiding incision of the healthy portions of the canal in introduction; in the same way it limits the incision or withdrawal. This instrument is introduced closed, and without the knife, unless the stricture is very large. The knife is then carried down, the screw at the handle turned until the hand on the dial indicates two or three millimetres beyond the previously-determined normal calibre of the canal, and the blade is then drawn through the stricture or strictures. The instrument is then closed to 25f and withdrawn. Partial closure prevents pinching of mucous membrane. The results are ascertained by examination with the full-sized bulbous sound. If a *trace* of stricture is left, the operation should at once be repeated, either using a wider blade or dilating two or three more millimetres. In very resilient strictures two or more attempts are sometimes unavoidable before complete sundering of the strictures is effected—nothing short of which can produce *permanent* beneficial results.



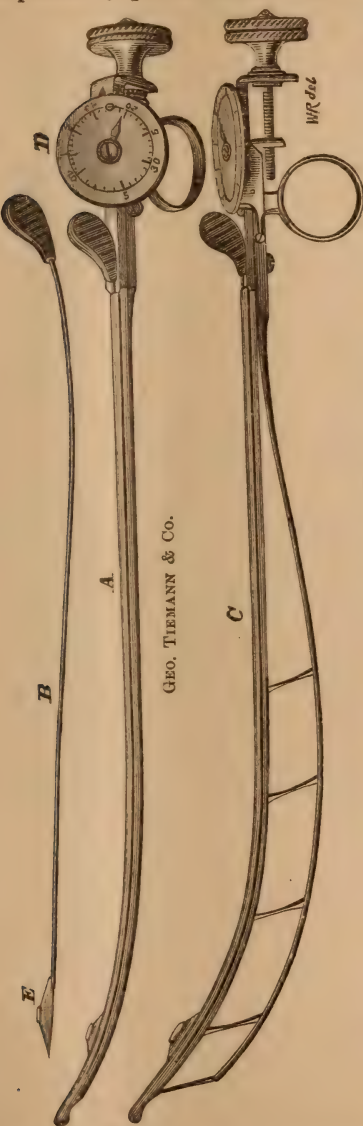
The guarded blades of this instrument should not project more than four millimetres, nor less than three, above the shaft; and the guard should not exceed $\frac{1}{4}$ m. in breadth, as more than this will hold behind the stricture and prevent easy division. In case of very dense and resilient stricture,

a perfectly plain blade may be used, always in such event

turning the instrument down as soon as the blade has passed through the stricture.

Dilating Urethrotome No. 4 is like No. 3, except that it is smaller, quite straight, and can be used in division of strictures down to the bulbo-membranous junction, without the necessity of dilatation of the deeper portions of the canal; hence, for all operations in the ante-membranous region, it is much to be preferred to the longer-curved instrument. In skilled hands it may also be used to advantage in the deeper parts of the canal. It is made with less difficulty, is of smaller diameter (16f), and more easily managed in the straight portion of the urethra. The hæmorrhage following operation with the dilating urethrotome, after the manner described, is usually slight, and ceases on slight pressure with the fingers at the point of incision—often without it. In some cases oozing continues, and may require the introduction of the

Endoscopic Tube.—This is six inches in length and of a calibre 28f m. to 32, and provided with an entering shaft to facilitate introduction.—The tube is introduced to a point beyond the incisions, and pressure made by a narrow retaining bandage sufficient to control the hæmorrhage. The shaft is with-



drawn when the patient desires to urinate, which he readily

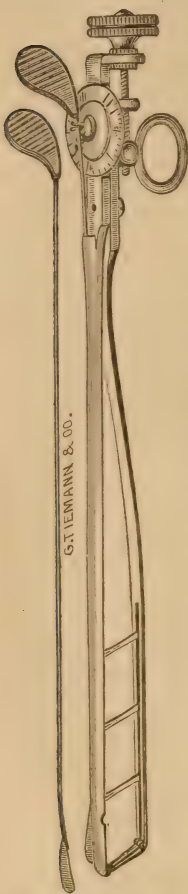
does through the tube, thus preventing contact of urine with the freshly-cut surfaces. Even if no hæmorrhage occur, it is well to introduce this tube, for the first twenty-four hours,

whenever urination is necessary. The tube, for easy introduction, should be about two sizes (millimetres) below the estimated normal calibre of the canal.

By means of the endoscopic tube, ocular examinations may be easily made at any point in the straight portion of the urethra. For controlling hæmorrhage at or near the meatus urinarius, shorter tubes, called meatoscopes, are used.

Solid Conical Steel Sound. —

The form most convenient is that figured on next page, the curve of which corresponds to an arc connecting the ends of a right angle measuring $1\frac{1}{2}$ inches. At the commencement of the curve, the size gradually diminishes, until, at the rounded extremity, it is one-fifth smaller than the shaft. For facility of introduction, and easy adaptation to the sub-pubic curve, simplicity of manufacture, and convenience in practice, it has my preference to all other varieties. The sizes run from 28† to 40, corresponding to the range of normal urethral calibre. Thus far, the extreme No. 40† has been met, once in fifty cases of adults; the opposite extreme,



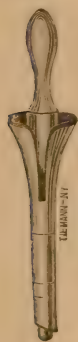
No. 28†, only once in three hundred. The average is about 32.

For preventing pain, irritation, and inflammatory action after operation, the

Cold Water Coil is valuable.

This apparatus is formed of a line of the small-sized India-rubber tubing of one sixteenth of an inch calibre, and six or seven yards in length. At the middle portion this tubing

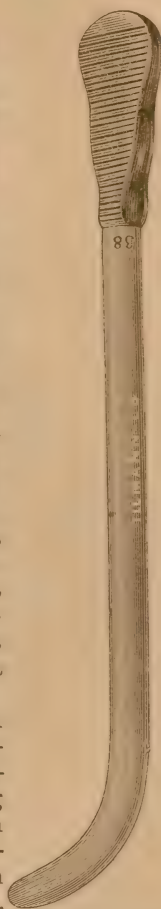
is coiled upon itself, so that, by half a dozen turns or more, it presents sufficient capacity to loosely encircle the entire penis.



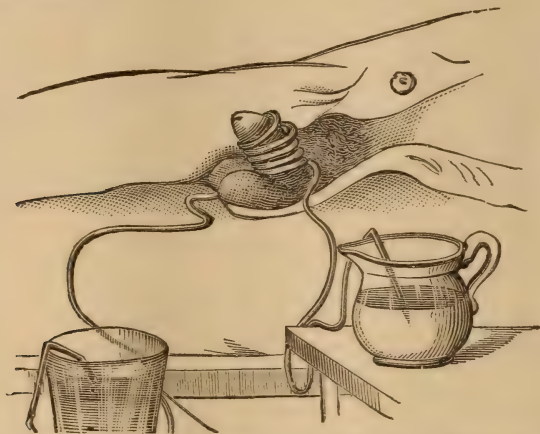
This coil, with the length of tubing proceeding from it, forms an apparatus through which, on placing one extremity of the tubing in a bowl or tumbler of ice-water, exhausting its contained air (by suction, or by drawing the tube through the finger), a siphonic current is established through the coil. The discharge-pipe being placed on a lower plane than the water-supply, the current may be kept up until the vessel is emptied.

The rapidity of the flow can be regulated, either by raising or lowering the end of either tube, which is the simpler plan; but the more convenient one is by a tapering, double, silver tube, attached to the discharge-pipe, a sponge being fitted to the inner tube. This sponge, when the inner tube is pushed down into the smaller end of the outer tube, becomes compressed and gradually obstructs the flow of water until not a drop will exude. This contrivance may be regulated so that either a free stream can pass, or that the single drops shall follow each other, more or less rapidly, with the regularity and precision of a time-piece.

By means of this arrangement, I have been able to apply cold to the penis, or scrotum, continuously, and conveniently both to the patient and the surgeon. The coils of tubing are retained in position by a band of cotton or linen cloth. A ready method of constructing this apparatus is by placing a strip of thin cloth, six inches in length and two in breadth, lengthwise, upon a large speculum or a four or six-ounce vial. The tubing, taken at the middle of a piece six or seven yards long, is wound around the vial, and, after the requisite number of turns are made, the projecting ends of the cloth are doubled over the coils and stitched to the underlayer, between the turns of tubing. If, after completion, the turns are found too small, they may be readily enlarged by drawing the tubing through the cloth to any desired extent.



I have found this simple contrivance of essential service in the acute form of gonorrhœa, reducing inflammatory action promptly, and thus giving relief to painful micturition and erections.



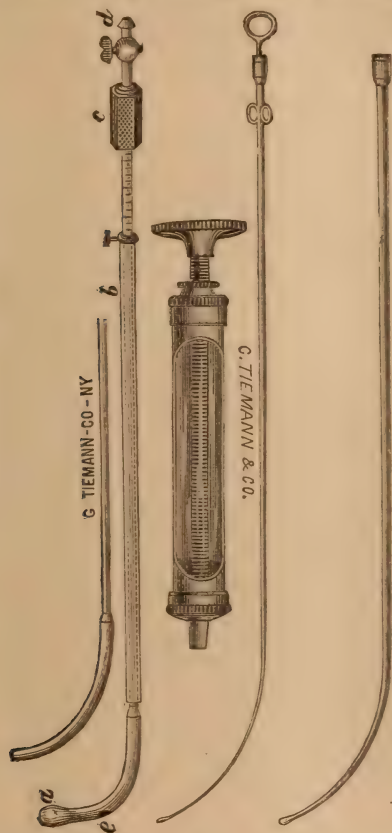
It has proved of great value in keeping down inflammation, and in preventing erections after the operation of circumcision. I habitually use it for the same purpose in operations for stricture, and with results more prompt and satisfactory than those hitherto attained by any medication or application with which I am familiar.

In examinations of the bladder for stone, where stricture is present, it is often difficult, on account of the contraction and the more or less spasm usually associated with it, to get sufficient play through the urethra to make an efficient examination of the bladder. Besides, in irritable subjects, when no stricture is present, spasm of the *compressiores urethræ* not unfrequently holds the exploring instrument so as to impede, if it does not quite prevent, the examination. For the purpose of avoiding this embarrassment the

Canulated Exploring Sound may be used. It is simply an ordinary sound upon which a metallic or hard rubber canula, seven and a half inches in length, is made, so as to be movable on the shaft of the sound. When slid down against the shoulder at the commencement of the curve, and fastened by the screw at the proximal end of the canula, it may be used in the ordinary way; but when it is held by stricture or spasm, the screw is loosened, allowing the play of the sound through the tube.

The Dilating Catheter is used in the preparatory dilatation

of strictures too small to admit the necessary instruments for immediate operation. I have designed the accompanying modification of Sir Henry Thompson's* probe-pointed catheter.



ter. It consists simply of a fine probe-pointed silver tube, eleven inches in length and three millimetres in circumference at its point, gradually increasing in size, so that at six inches it is six millimetres. This tube is traversed by a steel stylet throughout its length. Carefully insinuated through a close stricture, by the aid of a finger in the rectum, until its point may be supposed to have reached the bladder, the stylet is removed, and a small syringe is applied to its proximal opening. If the instrument has passed the *sphinc-*

*Thompson on Stricture of the Urethra. London Ed., 1858, p. 181.

ter vesicæ, on a withdrawal of the piston the urine will appear in the barrel of the syringe. The instrument may then be confidently pressed onward until the stricture is dilated to the largest capacity of the tube. A second tube of corresponding form, but with dimensions ranging from four millimetres at the point to eight millimetres, may then be similarly used.

In cases where, on account of the extreme closeness of the stricture, or from its divergent or tortuous course, a difficulty in passing the instrument occurs, Dr. Gouley's whalebone *guide-bougies* will prove serviceable.* These are used as in his grooved, canulated staff, viz., by the previous introduction of the guide-bougie into the bladder, *threading the dilating catheter upon it and following it down through the stricture*. Succeeding in this maneuver, the guide-bougie may be removed, the presence of the dilating catheter in the bladder tested by aid of the syringe, the stylet introduced, and the stricture dilated as previously described. The whalebone guide-bougies, to be used in this manner, require to be from sixteen to eighteen inches in length. They are easily made of any desired length and fineness, and, by steaming or rapid passage through the flame of an alcohol lamp, may be moulded at the extremity to any curve or angle deemed most likely to adapt itself to the eccentricity of the stricture.

In comparison with all other instruments for the same purpose, the relatively smaller calibre of the dilating catheter must give it an important advantage in cases of stricture of extreme tenuity. Through its successful use, the earliest possible assurance of entrance into the bladder may be acquired. It is of simple construction, of flexible material, and of uniform strength. It will, I feel confident, enable the judicious and experienced surgeon to accomplish a satisfactory dilatation of many strictures, which, without its aid, would necessitate a puncture of the bladder or the perineal section.

Otis's Simplified Aspirator.—The accompanying engraving represents a simple instrument, the original of which was extemporized from materials within the easy reach of every surgeon, and so combined as to form an *aspirator*, complete and efficient for all ordinary purposes.

The "simplified aspirator" consists of an ordinary well-fitted syringe (A), of any convenient size, joined to which, by an inch of rubber tubing, is a short, hard rubber metal, or glass bifurcating tube. To each arm of this tube is attached another bit of rubber tubing, which terminates in a

*Gouley on Diseases of the Urinary Organs. New York, 1873, p. 51.

hard rubber valve, such as is used in the construction of the Davidson syringe. These valves are arranged to work in reverse directions. On retraction of the piston of the syringe, the valve at B (connected by tubing with the aspirating needle) opens and permits access through the needle to the barrel of the syringe. The piston being driven back the valve at B closes, while that at C opens and empties the syringe through the connecting discharge-pipe. Near the base of the needle a short glass tube is inserted in order to afford early information of the character of the fluid in process of evacuation. "The simplified aspirator" was the result of a necessity for an instrument sufficiently small to fit in my "retention case," and a one-ounce hard-rubber syringe was found to be sufficiently large for easy aspiration of the bladder. In an emergency it might be used for transfusion, simply by adapting a small canula to the discharge pipe. This instrument has been duplicated by Mr. Schmidt, the surgical instrument maker, corner Thirty-fourth street and Broadway, and is put up in a case, with two sizes of aspiration needles, for nearly one-third the price of an ordinary aspirator of the cheapest description.

108 WEST THIRTY-FOURTH STREET, NEW YORK, June 17, 1875.

ART. II.—*On Angina Pectoris*. By Dr. JOHN C. PETERS, M.D., President of the Medical Society of the County of New York, and of the New York Neurological Society.

Angina pectoris is either a neuralgic or muscular affection of the heart, which may occur with or without organic disease of that organ. Thus in Trousseau's cases five were organic and eleven non-organic. But still it is especially liable to occur in connection with obstruction of the coronary arteries,

and with fatty degeneration of the muscular tissue of the heart.

Quain has laid much stress upon affections of the coronary arteries, accompanied by fatty degeneration of the heart, and the two diseases are often coincident. Rigidity and constriction of the coronary arteries, dependent upon fatty degeneration or atheroma of their coats, often seriously diminish the supply of blood going to the walls of the heart, and leads to fatty degeneration of them; and it is often found that the most extensively diseased branch of the artery supplies that part of the heart which has undergone the most complete fatty change. Thus, as the condition of the coronary arteries is often fatty, it may be due to the same cause which produces the degeneration of the muscular substance of the heart. Those who always look for calcification of the coronary vessels will often be disappointed, while almost complete soft fatty obstruction is often overlooked.

The characteristic symptoms of angina pectoris are those of very great derangement of the action of the muscles of the heart, either from paralysis or spasm, and they are also apt to occur when there is an insufficiency of the aortic valves, attended with a rigid and dilated state of the ascending aorta, combined with dilatation of the left ventricle. Attacks of angina pectoris are most apt to occur when the action of such a diseased heart and aorta is suddenly disturbed by physical exertion, especially when walking against a strong cold wind, or going up hill, or stairs, or from fits of anger or excessive mental emotion, which suddenly embarrass the action of the heart. The patient is then quickly seized with an intense, agonizing pain in the præcordial region, as I have often experienced, shooting through to the back and along the left arm, and producing a sense of sudden oppression or impending suffocation, although he may be able to take a long breath if required to. The face first becomes deadly pale, and is expressive of extreme anxi-

ety and suffering; cold perspiration breaks out; the pulse falters and may become almost imperceptible; the respiration is short and hurried; the face turns livid, and the patient is unable to lie down, or even move, as the least motion aggravates his sufferings intensely. Not unfrequently, however, the heart's rythm is undisturbed, and the patient experiences no palpitation or oppression, but sometimes the heart stops suddenly, and death ensues. These symptoms have been variously interpreted. Sometimes it has been supposed that the circulation in the coronary arteries is temporarily stopped, the walls of the heart become bloodless, and a true epilepsy of the heart is caused. More frequently, perhaps, there is over-accumulation of blood in the heart, from weakness or partial paralysis of its fatty degenerated walls, or sudden free aortic regurgitation may arrest the heart's action by paralysis from over-distension. This quick overloading of the cavities of the heart with blood will account for some of the severe pain, the indescribable anguish, and the sense of impending death, all of which may be relieved by an hypodermic injection of strychnine.

But angina pectoris may occur as a muscular or neuralgic affection, without any evidence of coexisting disease of the heart or aorta. The symptoms then differ from the above. There is not the same necessity of keeping a fixed position, for the patient may, and often does, writhe with pain, and tries frequent changes of posture. The sense of impending death is less, or may be wanting, etc.

Romberg regarded angina pectoris as an hyperæsthesia of the cardiac plexus, and these nerves were assumed to be the sole source of the pain.

But, as Niemeyer says, this so-called cardiac neuralgia is apt to extend with great intensity along the brachial plexus; and also adds that this transfer of the morbid excitement from the nerves of the heart to those of the arm is

best explained by the intervention of the *nervus cardiacus magnus* and *parvus*, as they originate from the middle and inferior cervical ganglia, which are connected by many twigs with the inferior cervical nerves.

Trousseau gives a number of cases of the neuralgic variety, and regards the disease as an epileptiform neuralgia, and says it often commences like an epileptic aura in the left arm, or some other part, and so runs to the heart. He places the seat of the disorder in the cardiac branches of the pneumogastric nerve, from whence he thinks it radiates to the cervical and brachial plexuses.

Others place the seat of the disease in the moderating or inhibiting nerves of the heart.

In 1848, Bridge, Weber, and Claude Bernard discovered, almost at the same time, that excitation of the pneumogastric nerve, or of its peripheral extremity only, retarded the motion of the heart. Since then the idea has become familiar to us of nerves possessing paralyzing or inhibiting properties, and it is now generally admitted that the pneumogastric nerve slows the action of the heart, or depresses, or moderates, or inhibits, its action; and the more this nerve is excited the more the heart will be apt to stop beating.

There are also accelerating nerves of the heart, and both moderating and accelerating ganglions. The ganglion of Remak, seated at the opening of the lower vena cava; the ganglion of Bidder, situated in the left auriculo-ventricular septum; and the ganglion of Ludwig, in the inter-auricular septum—all have different functions. The two former appear to be centres of excitation, and the latter of moderating or inhibiting the action of the heart.

Treatment.—Arsenic is spoken highly of in neuralgia by Drs. Hughes and Crosse; and Dr. Anstie speaks approvingly of it in angina pectoris, which he regards as a neuralgia, and states that it will lessen the severity of the attacks,

reducing them, in time, to a mere sense of tightness of the chest.

Trousseau quotes the case of a man aged fifty-seven who got rid of a very severe angina pectoris by taking six drops three times a day of Fowler's solution. Waring says it has been employed with varying success, and often fails, but many examples of its successful employment are on record. It is impossible to say how it acts in effecting a cure, for it can scarcely be doubted that it may produce a wide-spread granular or fatty degeneration of the tissues. The liver may become more fatty and enlarged than in the phosphorus liver; the kidneys may be seriously affected, their tubes choked up with fat globules, while the muscles of the heart and diaphragm are almost equally compromised in severe cases of arsenic poisoning.

To aconite is assigned an important role in the treatment of a large class of neuralgic affections, which Waring calls congestive, and believes it to be appropriate in some forms of angina pectoris, spasmodic asthma, and convulsive cough.

Tincture of assafœtida 3ss, with tinct. opii. m. xx, spts. ether sulph. 3ss, and mist. camphoræ 3iss, is said to be occasionally of great use as a palliative in some of the attacks.

Belladonna.—Dr. Joy states that a belladonna plaster over the præcordial region, renewed every seven or ten days, often procures a very considerable alleviation of the attacks. But Bretonneau and Trousseau were the great advocates of the belladonna treatment, in doses of 1-10th grain each of the extract and powdered root, once a day, in the morning before breakfast, for the three days; then two pills for ten days; then three for twenty days. If no improvement followed, four pills were given at one dose, and the quantity increased by 1-5th of a grain every ten days, unless unpleasant symptoms followed. This is precisely Trousseau's treatment for epilepsy, as he regarded angina pectoris, in many cases, as only an epileptiform neuralgia, preceded by a kind of aura

epileptica. Belladonna is supposed to sustain the action of the heart and arteries, and to prevent paralysis from over distention. Trousseau cured one case with belladonna over the heart, applied to the arm-pit, from which the aura started. Stramonium over the heart, applied to the sternum, cured another case.

Camphor was spoken favorably of by Dr. Copland, especially when given in combination with opium or hydrocyanic acid. When five or ten grains are given, a feeling of exhilaration is usually induced, attended with a sense of comfort or quietness, especially marked in those previously suffering from nervousness. It is largely used as an antispasmodic, and to quiet restlessness and nervousness. It readily passes into the blood, but its influence upon the heart seems to be capricious. Moderate doses quicken and strengthen the pulse.

Chamomile is an excellent remedy in the spasmodic or pseudo-neuralgic affection of hysterical persons, more especially in pseudo-angina pectoris and the colicky attack to which such persons are very liable; four to six minims of oil is the best dose. It lowers reflex irritability, even that produced by strychnine. It is most useful in those attacks of angina which are easily produced by derangement of the digestive organs.

Cherry laurel acts like prussic acid, and Phillips says the attacks of pain which occur in angina pectoris, and which in situation and course so closely resemble gastrodynia, are often more quickly relieved by laurel water and prussic acid than by any agent at our command. The dose of aqua lauro-cerasi is from five to thirty minims.

Ferri-peroxidum is spoken of by Dr. Hope as one of the most efficacious internal remedies, when angina pectoris is attended by any degree of anæmia; and it may also be useful when there is fatty degeneration of the heart. It was formerly given in doses of thirty to ninety grains, thrice daily.

Hydrocyanic acid has been successfully employed by Brugnatelli, Granville, and others. Schlessia relates a very severe case which, after resisting all other remedies, yielded immediately to prussic acid. It is regarded as a cardiac sedative by H. C. Wood, and large doses produce instantaneous diastolic arrest of the heart, which may be permanent. It first stimulates and then paralyzes the cardiac inhibitory apparatus, most probably in its centres. It lessens the respirations, and acts upon the peripheral ends of the vagi.

Lactuca virosa was used successfully by Schlesingle in doses of two grains, combined with $\frac{1}{2}$ grain of digitalis, every two hours. It is regarded as sedative and diaphoretic.

Opium was recommended on the high authority of Dr. Walshe as the best remedy in some of the emergencies of this frightful disorder; but recent observations have shown that ether, hot brandy, and water, and other diffusible stimuli, afford more speedy relief. Dr. Allbutt strongly recommends a morphia hypodermic injection in the dyspnœa of heart disease and the pain of angina pectoris. It removes dyspnœa, strengthens the heart, and removes congestion.

Nitrite of amyl, prepared by the action of nitric acid on amylic alcohol, or fusil oil, was first employed by Dr. Brunton in one form of angina pectoris with signal success, and he found it more effective than any other remedy in this painful and dangerous disease. Anstie and Talford Jones have also been successful with it, but Ringer had a case in which it abated the pain for a few seconds only, when it returned with its former severity and lasted the usual time. In this case it was employed many times in a great many attacks, with the same ill success. It so happened that Dr. Brunton gave it in the class of cases to which it is adapted, and Dr. Ringer, probably, did not. In Brunton's first case there was throbbing of the heart's carotids as high up as the ears, with severe præcordial pain extending to the right arm. The usual characteristic sense of impending death

was absent. The pulse was quickened, and the arterial tension, as traced by the sphygnograph, was much increased from contraction of the small systemic vessels. It was this increased tension which first led Dr. Brunton to employ the nitrite of amyl, for, in the case in question, he thought that the attack consisted of spasmodic contraction of some, if not all, of the small systemic and pulmonary vessels, which spasm gave way on inhaling the nitrite, and the pain then disappeared. On recurrences of the attack the patient always inhaled thenitrite of amyl, and always obtained instantaneous relief. According to this view, the attack in this case consisted in an epileptic spasm of the pulmonary and other arteries, andthe nitrite of amyl is admirably adapted to relieve such a state; for the most prominent symptoms caused by its inhalation are a sense of great fullness and distension of the head, with intense flushing of the face, deep, labored respiration, and an exceedingly rapid and violent action of the heart. The arterial pressure is much diminished, and the whole attack is due to dilatation of the capillaries, arising from a direct paralyzing action of the drug upon the coats of the arterioles, while it does not lessen, but rather increases, the action of the heart. Dr. H. C. Wood says the pathology of some of these cases of heart-pang is not definitely made out, but there is now abundant evidence of the value of nitrite of amyl in relieving, in some cases almost instantly, an agony which has resisted all other treatment. This appears also true, whether valvular disease or mere functional disease exists. But in cases of advanced fatty degeneration or very great dilatation of the heart, he thinks its use would be attended with danger, owing to its effect on the heart muscle. But this fear will be unfounded, unless the action of the drug be pushed very far. In Anstie's and Madden's cases there seems to have been paralytic distention of the heart. In the former, the first sniff of the nitrite produced the characteristic flushing of the face and a sense

of fulness of the head, and as soon as the blood pressure, or the heart, was relieved by the induced paralysis of the smaller arteries, the heart gave one strong beat, and the patient passed from a state of agony to one of perfect repose and peace. This happy experience has now been repeated several times, and the patient is able to cut short all his paroxysms, and has discarded the use of ether and greatly reduced his allowance of stimulants. Dr. Henry Madden repeatedly experienced, in his own person, the beneficial action of the nitrite in cutting short attacks of angina pectoris from organic disease of the heart. He always inhaled five drops, and the effect was wonderful, the spasm being checked in two minutes, and, although the frequency of the paroxysms was not diminished for some time, yet they were trifling in force compared with their predecessors; but gradually they became less and less frequent, and finally ceased altogether. The drug always produced the usual symptoms in the head, violent commotion in the chest, tumultuous action of the heart, and quick respiration. In severe attacks the full action of the medicine, with its concomitant vascular commotion, was quite essential, for the pain never began to yield until the heart was quite violently agitated. Dr. M. had a feeling which may have come from distention of the heart, as it seemed to him as if the front of the chest was bulged out into a convex prominence. Hence, in Anstie's and Madden's cases, the relaxation of the distant capillaries seems to have taken off the pressure of blood down into the ventricles, and then vigorous contractions of the heart relieved it of its paralytic distention. A hypodermic injection of strychnine may accomplish the same object.

Soda was first suggested by Bretonneau, on the supposition that the complaint was due to calcareous concretions in the first part of the aorta, and he thought that the prolonged use of bicarbonate of soda, from which such good effects are

obtained in the calculous diathesis, might prove beneficial. In the first case there was no favorable change for two months, but the patient was no worse; then he manifestly improved, and after the regular use of artificial Vichy water for six months he got rid entirely of all his symptoms of angina pectoris. Bretonneau often repeated this treatment, and he treated several cases successfully. He first gave twenty grains of soda before each of the two principal meals, and gradually increased it to forty and fifty grains; sometimes one hundred and sixty to two hundred grains were taken in a day. A so-called course of soda lasted ten days, then there was an intermission of two or three weeks, when the soda was resumed, and this treatment was thus continued for a year, then omitted for several months and recommenced again. He also gave belladonna continuously, although Trousseau often laughed heartily at this chemical treatment. It is admirably adapted to remove fatty degeneration, which is one of the most frequent concomitants of the disease, and, if combined with regular doses of nux vomica to relieve the debility of the heart, is well worthy of renewed attention.

Sulphur was recommended by Dr. Munk in angina pectoris, spasmodic asthma, and other spasmodic affections of the chest, in doses of 3ss-3j once or twice daily.

Iodide of potash was used by Dr. Oliver, of Maas, with great benefit in his own person.

ART. III.—The Therapeutic Action and Uses of the Turkish Bath; with a Sketch of the History, Nature, Advantages, and Processes of the Modern Improved Turkish Bath. By JNO. S. WILSON, M.D., Atlanta, Ga.

Some form of what is now called the Turkish bath existed among the Greeks, Romans, and other nations, as far back as history extends. But it was used by the ancients, as it is now by the Turks, as a luxury, and not as a remedy. Still

there is good reason to believe that the remarkable health and longevity of those who resorted to it was largely due to its use.

The scientific remedial use of the Turkish bath on rational principles may be dated only about twenty years ago, when it was introduced into Great Britain by Mr. David Urquhart. Since then its use has rapidly extended in Europe and in this country; and the verdict of the most distinguished authorities is, that it is a therapeutic agent unequaled in the correctness of its principles, as tested by modern science; in safety, in efficacy, and in the extent of its applicability to the treatment of disease, as demonstrated by the happy experience of physicians and people. This is true of the improved Turkish bath, which differs from the bath as used by the Turks in the high and graded temperatures of our baths; in the exclusion of the unscientific and violent shampooing as practiced by them; and, above all, in the *dryness* of the air of our improved baths.

The Turkish bath, then, is not a steam or vapor bath, but a *dry, hot-air* bath. If steam is used at all, it is only for the purpose of heating coils of pipe, the heat being radiated from these coils, with no escape of steam into the rooms. Whenever steam or vapor is diffused through the rooms, the essential distinguishing feature of the Turkish bath is gone, and such a bath should not be called a Turkish, but a Russian or vapor bath, which is far inferior, as we shall see.

In the Turkish bath of which I am speaking the dry air comes in contact not only with the two thousand square inches of the skin, but with the twenty thousand square inches of the lungs, and it is hardly necessary to remind physicians that such a bath must be far superior to any box-bath, with the head out, or any bath in which a room is filled with steam that can not be breathed, nor borne at a high temperature, and which retards instead of favoring perspiration. Of this more hereafter.

Another essential feature of a Turkish bath is to have rooms of *different temperatures*, to suit individual cases.

Another, still, is to have a separate room for shampooing, where the *heat can be raised much higher* than in a vapor bath. The advantages of the hot-air bath may be briefly summed up thus: 1st. This air comes in contact with the twenty thousand square inches of the cell-structure of the lungs. 2d. It can be breathed not only without injury, but with positive delight, to the very bottom of the lungs, at a temperature of 150°, 200°, or higher, while vapor can hardly be breathed at all at a temperature of 110° or 120°, and is oppressive and unnatural to inhale at any temperature. 3d. Vapor retards instead of favoring perspiration, while the hot air of the Turkish bath is better than any thing else for this purpose, on account of its levity, its dryness, and the much higher temperature to which it can be raised. 4th. From this high dry heat we have a direct and powerful remedial agent not attainable in a vapor bath.

Processes of the Turkish Bath.—Every Turkish bath should have not less than four large, well-ventilated rooms. These are the *Frigidarium*, or cooling-room; the *Tepidarium*, tepid or first warm-room; the *Calidarium*, or hot-room; and the *Lavatorium*, or wash-room.

The bather first enters the frigidarium, where he undresses, and passes into the tepidarium, the temperature of which ranges from 110° to 140°. The object of this room is to solicit a general perspiration, without any undue excitement or oppression, before going into the next or hot-room. My practice is to promote these ends by the use of warm foot-baths and cold, wet cloths to the head.

When a general moisture appears on the skin, the bather is passed into the calidarium, hot or sweating-room, which is heated from 140° to 180° or 200°. In in this room the shampooing is done, as it always should be, to obtain the benefits of this important part of the process. As a general rule, the

shampooing should be done with the *hands* only. Except in some rare cases, neither flesh-brushes nor coarse, rough cloths should be used in the Turkish bath, because they are useless, and might in some cases be injurious.

After sweating, shampooing, percussing, and soaping our bather in the calidarium, he next passes into the lavatorium, or wash-room. In this room he begins with a warm shower-bath, which is gradually changed to cool, and then cold. This not only cleanses him, but it closes the pores and causes a vigorous reaction. This last important result is always readily obtained after passing through the hot-air bath, the feeblest persons reacting without difficulty. I object to the plunge-bath, as used by many, because the shower will accomplish all that is necessary without the shock of a plunge, which is unpleasant, and, in some cases, might be dangerous.

The bather, having now passed through the bath, returns to the frigidarium, or cooling-room, where he is directed to dress slowly; or, if he is disposed to a secondary perspiration, he is wrapped in a sheet or blanket, and reclines on a lounge until he is "all right," or free from perspiration.

Thus have I given a brief sketch of the processes of this grand bath, so that physicians may better appreciate its therapeutic action, and distinguish between the real Turkish hot-air bath, and vapor box Russian bath, etc.

Let us now turn our attention to that most interesting subject—

The Therapeutic Action and Uses of the Turkish Bath.—Every one who understands the processes and physiological action of the Turkish bath will readily see that its essential feature, its great point of excellence over all other baths, is the immersion of the whole body, including the head, in *dry, hot* air, thus bringing this air in contact not only with the skin, but also with the much more extensive cellular structure of the lungs. The functions of the skin, and their importance to health, are too well known to detain us with any extended

account of its physiology. All physicians are familiar with the experiments of Magendie, Foucault, and other French physiologists, who have proved that coating the skin of pigs, dogs, and other animals with any impervious substance results in asphyxia, disease, and speedy death. It may also be remembered that Foucault has demonstrated that even *partial* coating of the skin causes a variety of diseases, and especially scrofula, paralysis, consumption, and all that formidable class of affections arising from malnutrition and the retention of poisonous matters in the system. And such effects are not at all surprising when we call to mind the fact that through the skin are discharged not only water, but carbonic acid, urea, bile, fatty matters, drugs of all kinds, and in short all kinds of poisons, whether introduced from without or generated within from disease, or from arrest of the secretions and excretions.

It will thus be seen that the skin is capable of supplementing, to a great extent, the depurating action of the lungs, kidneys, liver, and other organs, and that by its usual and direct, and also by its *vicarious* action, a greater quantity of effete and deleterious matter may be safely removed from the system than through any other channel. All this being admitted, it will be as readily conceded that diaphoretics are the most valuable of all our remedies, and a practical exemplification of this is found in the fact that no class of medicines is more used in the practice of all physicians. Yet all will agree that none are more uncertain and unreliable, and that the most effective remedies of this class make heavy drafts on the vitality of patients by their relaxing, depressing action. How desirable, then, to have an agent that will certainly, speedily, and pleasantly excite perspiration to any desired extent, not only without exhaustion or depression, but with increased strength and vigor. In the Turkish hot-air bath we have such an agent. As to its power as a diaphoretic it is needless to argue. It is enough to say

that it *never fails*. The *light, dry air* of this bath, heated to a temperature of from 120° to 160° , will sweat any thing covered with skin and permeated with vessels in which blood can circulate. But the invigorating effects of this bath may be doubted by some physicians, who seem to fall into the popular error that it is actually debilitating, and that only a strong person should venture on it. Nothing could be further from the truth. Perspiration, in a certain class of diseases, is a symptom of weakness, but there is nothing in the nature of this discharge to sustain the idea that it is debilitating. It is well known that the matters thus eliminated from the system are composed almost exclusively of water and various salts and effete substances, which are not only useless but oppressive when retained, interfering with the proper performance of all the vital functions by poisoning and obstructing the fountains of life. But, as satisfactory as are the teachings of physiology on this subject, daily observation and experience are still more conclusive. In proof of this I have only to refer to workers in foundries, shampooers in Turkish baths, and many other occupations in which the body is subjected to a temperature of from 120° to 150° of dry air all day, with, of course, profuse perspiration. And yet there is no class of men more healthy and robust than these sweltering toilers in what would seem to be intolerable heat. And the same is true of field laborers and many others who are bathed in sweat from morning to night. My shampooer works from eight to fourteen hours every day, in a temperature of from 120° to 180° , and loses nothing in health, strength, or spirits, and he goes, without clothing, from the last named temperature into the pump-room many times a day, pumping water, and such is the case with many others, thus showing that there is no danger in the great changes of temperature, which is the bug-bear of some physicians who do not seem to understand the philosophy or the practice of the Turkish bath.

The position that this bath is not debilitating, but, on the contrary, highly tonic and invigorating, could be sustained by almost numberless authorities of the highest character, but I deem it unnecessary to adduce them. I can say truly that I have carried the feeblest women and infants through my bath, and I have yet to see the first evidences of exhaustion or even depression from its action. It invariably imparts strength, buoyancy, and vigor, both of mind and body. And what better calculated to act as a depurator, tonic, and invigorator than the Turkish bath, with its combination of hot and cool air, warm and cold water, friction and shampooing, its stimulus of heat and reaction of cold, its electricity and magnetism, acting as no other agent or combination of agents can act?

Well does Dr. Thudicum say that "you can remove as much of the poisonous and effete matter from the body in one hour in the Turkish bath as can be removed by any other means in twenty-four hours." And he might have added that the removal of such matters, combined with the frictions, etc., which are a part of this bath, must give a spring tone and vigor to the whole man which nothing else can give. The Turkish bath, then, is superior to all other remedies as a depurator, tonic, and invigorator. It not only cleanses the skin as nothing else can do, but it is equally effectual in purifying the blood, doing this as thoroughly as a sponge is cleansed by wringing it frequently out of pure water.

2. It equalizes the circulation and removes congestion more effectually than any kind of bath or any other remedy.

This can be readily understood when we call to mind the fact that some forty miles of sweating tubes are relieved from the ordinary atmospheric pressure and drawn on by the highly rarefied and dry air of the bath, thus exerting an enormous suction power, which causes a very strong centrifugal current, draining the congested internal organs, and

then this centrifugal action is continued and established by the shampooing and the tonic stimulating action of the cold water, which follows the hot air and the shampooing.

3. The Turkish bath has a very powerful influence on the superficial nerves of the skin, and, through them, on the whole nervous system, voluntary and involuntary.

Under the rousing effect of the high heat, combined with friction and followed by cold water, the nervous ramifications of the skin send revivifying, healthful currents to the nervous centres, and these, responding to the impression, return other nerve currents to the surface; and thus are established that action and reaction in the nervous system—the motive power of the body—which is the very essence of health, strength, and vigor, and the source of those harmonious movements in all the functions, that delightful repose of mind and body which the Turkish bath alone can give. Such is the effect of a bath through the distal nervous ramifications. Of course the direct effect on the brain and other nervous centers, from its equalizing, eliminating, and depurating action, must be very great.

4. This bath not only purifies the skin and blood by perspiration, equalizes the circulation, and tones and invigorates the whole system; it is also the medium through which the elements of health and vitality are directly imparted and the germs of disease are destroyed. In this bath oxygen at a high temperature is supplied to the blood, and this oxygen produces its vital and chemical effects for more energetically than at the ordinary temperature. At the temperature of this bath it must oxygenate and consume organic impurities, destroy fermenting matters and virus germs. And besides this salutary destructive oxygenation, the highly heated air doubtless exerts a potent electrical influence on the blood and nerves, while through the stimulating and expansive action of the heat, absorption of oxygen must also be much increased. The action of the heat of this bath,

as indicated through the 20,000 square inches of the air cells, as well as on the skin, can hardly be over-estimated, thus giving the Turkish bath, in which a high heat can alone be obtained and borne, a most decided advantage over the vapor and all other baths, whether used with head and body in the bath or with the head out, as in the box-bath, which some take, thinking that they have had a Turkish bath, or at least a good substitute for it. Never was a greater mistake made. These baths may do for home use in the absence of any thing better, but to use them as a Turkish bath, or to call them such, is to bring reproach on the only perfect bath—the modern, improved, all over, hot-air bath, with its different rooms of graded temperatures, its hot rooms for shampooing, and its dry-room air applied to the whole skin and lungs at much higher degrees than can be endured in any vapor bath. And here let me meet an objection that may arise in the minds of some. A distinguished physician of this city said to me that he found the hot air acting on the lungs would cause pneumonia. The answer to this is, that my own ample experience, extending over more than two years, has fully demonstrated that this air, so far from having an irritating action on the lungs, has a most delightful, soothing effect, allaying cough, facilitating expectoration, making the breathing deep and easy, removing all feeling of oppression, and exerting the most happy curative action in all pulmonary affections. And such is the testimony of many others. This action is very much like that of a warm poultice to an inflamed surface.

Having now given the general principles on which the Turkish hot-air bath acts, I will briefly notice the application of these principles to specific diseases. And so extensive is the application of these principles, so correct have I found them to be, both in theory and in practice, that I do not consider the language of the distinguished Erasmus Wilson extravagant, when he says: “We do not ask ourselves what

diseases can be cured by the Turkish bath, but what diseases can resist its power to cure."

Leaving the more extended application of the principles set forth to my readers, I will attempt but little more than to mention some of the diseases in which this great remedy seems to be specially indicated, at the same time disclaiming any intention of making it "a panacea for all our woes."

From what has been said of the depurating and equalizing action of this bath, it will at once be admitted that it is the remedy *par excellence* in all inflammatory and congestive diseases, and especially those of the mucous membrane, on account of the close connection between these membranes and the skin. Hence its superiority over any other remedy in bronchitis, acute and chronic; in common colds; in chronic nasal catarrh; in many affections of the conjunctiva; in leucorrhœa, diarrhœa, dysentery, cystitis, and, in short, all inflammations, and especially those of the mucous membranes.

As a preventive and cure of colds and all affections of the air-passages, it is certainly our best remedy. Besides its equalizing effect, the warm, dry air has a wonderfully soothing action on the membrane lining these passages, allaying cough, and promoting a free discharge, as before mentioned. I believe it to be the only truly curative remedy in chronic nasal catarrh, acting as it does by its revolutionizing effect on the whole system, and by its direct effect on the inflamed membrane, thus permanently removing the inflammation and congestion, which are generally only temporarily relieved by local applications. The same is true, to a great extent, of leucorrhœa. And I am satisfied that the very best remedy for croup would be to put the sufferer in a Turkish bath, and let him remain there till relieved. He should then go back into the tepidarium, in a temperature of from 100° to 110°; and, on a return of the symptoms, he should go again into the calidarium, heated from 120° to 140°; thus repeating, again and again, until the disease is subdued.

Whooping-cough is another disease in which I have no doubt that the Turkish bath, by its action, both on the skin, lungs, and mucous membrane, and on the nervous system, would do more than any other remedy, both in relieving the symptoms and in shortening the disease. The same is true of asthma, and in one case in which I have had an opportunity of trying the bath, it has prevented the paroxysm every time it has been used.

In this connection I may also mention pulmonary consumption, though it is a disease of nutrition and not one of the air-passages and mucous membrane, only so far as these are secondarily affected. Reason and facts clearly demonstrate that no remedy is so likely to arrest the progress of this fell destroyer. By the use of this bath we may confidently expect to improve all the nutritive and digestive functions, to remove internal congestions, dilate the air-cells, greatly increase oxygenation and decarbonization, promote expectoration, allay cough, check night-sweats, procure sleep, and eliminate the tubercle-producing products from the system.

My own experience with the bath proves that nothing is so well calculated to relieve the distressing symptoms of consumption, and especially the cough and night-sweats.

The above views are corroborated by the testimony of Dr. Leonard, physician to the Infirmary for Diseases of the Chest, London. He has given a detailed statement of a number of cases under his charge successfully treated by the Turkish bath. One patient, killed by accident, furnished positive evidence of the reconstruction of the diseased organs.

In other diseases of the nutritive and digestive organs the Turkish bath is a remedy entitled to far more confidence than any other. Its effects in *dyspepsia* are truly wonderful; and from my own personal observation I can say that it, with proper dieting and exercise, and especially with the

use of the health-lift, will cure all curable cases in a remarkably short time. The strength, appetite, digestion, and assimilation are increased almost from the first bath. Can this much be said for drugs? In *scrofula*, and its kindred disease, *cancer*, the Turkish bath is plainly indicated as the most promising remedy for these formidable affections. Its power over *scrofula* in giving strength and vigor, in improving digestion, in promoting elimination and nutrition, can not be doubted. As to its use in *cancer*, Dr. Thudicum says it "will remove conditions accompanying, favoring, or, perhaps, producing that awful disease." Mr. Urquhart gives a case where a removed and returning cancer, "in a desperately hopeless condition," was perfectly cured by the bath. He also tells us that cancer is unknown in countries where the bath is generally used, and where the climate is favorable to the action of the skin.

This bath is a certain and speedy remedy for *obesity*, while it as surely promotes the nutrition of the ill-nourished. When in New York last summer I was told by the proprietor of a Turkish bath that such people lost from five to seven pounds from a single bath, by actual weighing, with a corresponding increase in strength and vigor. But it is proper to add that the loss in weight continued only a few days, the reduction being mostly due to the discharge of water from the fat. To reduce this permanently, the bath should be followed by a proper system of dieting and exercise.

In that general derangement of health known as chlorosis, or green-sickness, the Turkish bath is plainly indicated on account of its action on the nervous system, its tonic effects, and its potent influence over all the digestive and assimilative functions. The same is true of all inflammatory and obstructive affections of the womb, and from the bath we may reasonably expect a more permanent effect than from any local applications. In painful and suppressed menstruation, I can confidently recommend it from my own observation.

In all cases of blood poisoning, whether from drugs or disease, no remedy will compare with the Turkish bath. This position is sustained by a knowledge of its mode of action, by my own personal experience, and by authorities too numerous to mention.

Of course, then, it must be an excellent remedy in syphilis, by eliminating the poison from the system and removing the effects without that injury to the constitution which is so often seen from the use of the ordinary remedies. It can also be recommended in the erysipelatous and furuncular diatheses, and in almost every kind of skin disease, whether of local or constitutional origin. I have not a shadow of doubt that, in all the above affections, the Turkish bath, with its *high* heat and *dry* air, far excels the hot springs of Arkansas, or any vapor or water bath, either medicated or unmedicated. This can be readily understood when the action of this bath is considered, and when it is admitted, as all intelligent physicians are ready to do, that the cures made by the hot springs and by vapor and hot-water baths are due to the action of the heat and not to the minerals in the water. This being admitted, the superiority of the Turkish bath over vapor or water, as a means of applying heat and exciting perspiration, can not for a moment be doubted.

In rheumatism and neuralgia, which may be classed among the blood diseases, the above remarks are equally applicable, and the power of the Turkish bath over these diseases is admitted by all, and amply confirmed by my daily observation of its effects. It never fails to give relief, and its persevering use will cure all curable cases. Here the heat should be higher by many degrees than can be used in any water or vapor bath. I can confidently recommend it in sciatica, when thus used.

In malarial poisoning and chills and fevers the Turkish bath is far better than any drug to remove the poison, arouse the liver, tone the system, and arrest the paroxysms.

This bath also speedily removes whisky, tobacco, opium, and all things from the system, and is the only true and proper "antidote" for these things, removing, at the same time, the offending cause, the effects, and, to a great extent, blunting the morbid craving for these health-destroying agents.

Headaches, which are generally caused by retention of some morbid matters in the system, or by congestion of the brain, are almost invariably relieved by the bath. The same will doubtless prove to be true of the more formidable class of kidney diseases, and especially Bright's disease and diabetes. Says Dr. Von Geisen, speaking of the former: "A judicious use of the bath (Turkish) robs this dreaded disease of half its terrors. The danger of uræmic poisoning is placed at the remotest possible limit, and the instances in which life has been comfortably—nay, *enjoyably*—prolonged, can be counted by hundreds."

Organic disease of the heart has been supposed to contraindicate the use of the Turkish bath, but the observations of many distinguished physicians have shown that such a presumption is unfounded. In most cases the bath gives decided relief, as we might infer from its depurating and centrifugal action on the circulation, and its sedative effect on the nervous system. In nervous affections of the heart its beneficial effects are manifest, and have often been witnessed by me.

Indeed, as an anodyne, sedative, and anti-spasmodic in all forms of nervous disease, it is superior to any of the remedies so often and unsuccessfully resorted to. Hence it will doubtless be found to be the best remedy in mania-a-potu, hysteria, hydrophobia, Asiatic cholera, tetanus, chorea, and many other diseases attended with preternatural nervous excitement. For sleeplessness I have found it to be an unfailing remedy. It has proved to be the best treatment for insanity. In the Cork lunatic asylum the cures were doubled and the

deaths diminished one-half under its use. The offensive odor from the skin of the insane is soon removed by this bath. The truth is, no personal odor will withstand it. I succeeded in removing the intolerable smell in a case of fœtid perspiration of the feet, of many years' duration, by a single bath.

In most forms of dropsy the Turkish bath is our most hopeful remedy. I have used it successfully in several cases of threatened paralysis, and encouragingly in some cases where the disease was confirmed. Most fevers could doubtless be abated by its early use.

As a beautifier of the complexion it is of course more interesting to the ladies than to physicians, but all who have wives, daughters, or sweethearts should know that it is the only true cosmetic.

As a prophylactic against disease it is of special interest to all classes, and in this respect it has no equal. But there is one point in which it is more particularly interesting to physicians, and that is its power to soothe and compose mind and body after fatigue and mental anxiety. No class suffers more from these than physicians, and in the bath they have a delightful and certain remedy—one that will always be sought again when once enjoyed.

For the sedentary it will answer most of the purposes of active exercise, and in this respect is an invaluable boon to all whose circumstances forbid taking such exercises as are essential to health in the absence of the only substitute—the Turkish bath.

Such is a very brief outline of what might be said on the action and uses of this perfection of baths, which is daily growing in popular and professional favor, and which has already received the indorsement of the leading authorities in medicine. Among these I will only give the following names: Erasmus Wilson, Spencer Wells, Sir Benjamin Brodie, Drs. Armstrong and Barter, of Europe; Drs. Wood,

Doremus, Emmett, Mott, the two Flints, Drs. Agnew, Hammond, Sayre, and Sims, of New York, and hundreds of others whose names it were a useless and endless task to mention.

ORIGINAL LECTURES.

ART. IV.—*History of the Discovery of the Circulation of the Blood.* Delivered February 1, at Starling Medical College, Columbus, Ohio, by W. J. CONKLIN M.D., Professor of Physiology.

On a beautiful Sunday afternoon in the fall of 1642 was fought the battle of Edgehill, so memorable in English history. The scene on that October evening was a remarkable one, and has a peculiar interest for us as physicians, aside from its influence on the civil liberties of England.

In the foreground lies the little town of Keinton, while in the distance is seen the vast expanse of woody Warwickshire, already resplendent in its autumnal coloring.

King Charles the First, with his handsome, melancholy face reflecting the fitful gleams which fortune sends over the royal arms, is there as the central figure. A little to one side, sheltered by a hedge, is seen a group of three, whose employment contrasts strangely with the warlike nature of their surroundings. Let us draw nearer to this group.

Reclining on the ground, deeply absorbed in reading a book, is a man of the lowest stature, olivaster complexion, a black, piercing eye, whose hoary locks tell the story of more than three score years. Around him are two children familiarly playing, now interrupting his studies with some childish question, and again watching the ebb and flow of the battle in the near distance.

The elderly man is Dr. William Harvey, physician to the royal family. The children are the young Prince and Duke

of York, afterwards Charles II. and James II. Soon a bullet from a great gun plows the ground near them, which causes the aged physician to close his book and remove his royal charges to a safer location.

We have chosen this moment to introduce to you Dr. Harvey, the illustrious discoverer of the circulation of the blood, not because the battle-field or his connection with royalty add any thing to his glory or prominently reflect his character. We have chosen it rather because the coolness, the courage, the force of character, and the entire consecration to his work which would lead him to prosecute his studies with the fight going on around him, *are characteristic* of the man.

We can not attribute Harvey's behavior on this occasion to indifference to the fortunes of his patron and king, for while we scarcely expect to find him in full sympathy with the effort to overthrow parliament and English Puritanism, yet King Charles had been his friend and protector.

Vacillating and repulsive as is the character of Charles in many respects, when we look upon him as the friend of science, as the patron of a Van Dyke and a Rubens, and see him in the laboratory, sitting an enthusiastic disciple at the feet of the "crack-brained circulator," as Harvey was jealously nick-named, going over, step by step, the proofs of the new theory, we find abundant reason for Harvey's adherence to his person.

Having just completed our study of the blood and the mechanism by which it is enabled to run its fertilizing course throughout the organism, it will be both interesting and profitable for us to go briefly over the history of the discovery of the circulation of the blood. This history possesses more than ordinary interest now, both from the nearness of Harvey's tercentenary (1878), at which a proper memorial will be placed in Folkstone, his birth-place, and from the numerous impeachments to Harvey's title as discoverer which have been recently published.

These, however, are mostly revivals of the same claims of which Haller long ago said: "Others at length, that could not withstand their own eyes and the just sentence of all Europe in its favor, were invidiously for depriving our British Hippocrates, who pulled off the blind-fold from physic, of the honors due from so great discoveries, by fishing them out from the dark waters of his predecessors."

A late memoir (1876) by Henri Tollin, of Magdeburg, brings to the surface once more the oft-repeated claims of Michael Servetus, one of the most remarkable men of his day, and whose tragic fate always awakens our deepest sympathies. A memorial tablet recently placed in one of the halls in the University of Bologna proclaims Carlo Ruini to have been the first to point out the true course of the blood. But a few weeks ago (October, 1876.) there was unveiled in the University of Rome a monument in honor of Andreas Cesalpinus, the great naturalist, for whom the Italian *savans* claim the honor of the great discovery, and now it is proposed to inscribe over the portals of the University of Pisa, in which Cesalpinus was lecturer on medicine, the unkind and unbecoming insinuation, "Ill-advised was the English Harvey, who, in 1628, dared to arrogate to himself the discovery of this mighty truth."

No wonder that rival nations and rival schools should contend for the honor of the discovery of the blood's circulation, for it is the fundamental fact of a rational physiology. It is the keystone of the physiological arch, upon which is reared the vast superstructure of modern medicine.

The circulation of the blood seems to us such a simple fact that we can scarcely realize the struggle which its discovery cost the human intellect. But discoveries usually have long histories. They represent ages of toil and study, of efforts misdirected, and, in fact, oftentimes seem to run through the whole alphabet of failures before their success is spelled out. The accidental experiment with the frog's

thigh in the laboratory of Galvani represents the beginning; the subtle fluid harnessed to gigantic magnets and made to lift prodigious burdens, or as message-bearer mounting the wires and circling the globe, represents the present; between which there runs a long and bitter history of experiment and failure, much the larger portion of which is still unwritten.

So with the circulation. Long years labored at the birth. Erasistratus taught that the arteries were air-tubes. Galen showed them to be filled with blood. Step by step, Vesalius, Servetus, Realdus Columbus, Fabricius, and a host of others, blazed the way for the immortal genius of Harvey. Thus the seed sown in one age ripens into fruit in another age, when the hand of the sower perhaps is dust.

The recorded thoughts of every man are undying. Others appropriate, advance, apply them, and thus many minds are required to secure the immortality of one.

In order to more intelligently trace the birth of the modern theory of the circulation, let us take a rapid survey of the physiology of the pre-Harveian days, so far as it affects the subject under discussion.

One of the most difficult lessons which the human mind has ever had submitted to it was to learn to accept the testimony of the senses. To us, living in the last quarter of the nineteenth century, a century as remarkable for its iconoclastic propensities as for its rapid scientific advancement, this seems hardly credible.

Ancient medicine concerned itself only with the proofs of authority. Modern medicine relies almost wholly upon the proofs of experiment and experience. In the pre-Harveian days no authority was recognized but that which emanated from the oracle of Cos, or the divine apostle of Pergamos, as Hippocrates and Galen were reverentially named. The doctrines of Galen, a man who by his own account was twice called by the god Apollo to study medicine, and of whom the

emperor Marcus Aurelius said, "We have but one physician; Galen is the only man of the faculty," were universally held to be true, and to doubt was medical heresy. An unbroken succession of anatomists for fourteen hundred years studied their dissections through Galenic spectacles, until Vesalius, the bold Fleming, dared assert that Galen's descriptions, drawn from the dissections of monkeys, did not correctly represent human anatomy.

The schooling of Vesalius on the hill of Montfaucon, disputing with dogs and vultures for the bodies of criminals, or at the risk of his life disinterring bodies from cemeteries, was not calculated to increase reverence for the teachings of the past, but gave him that moral courage to burst open the seal of authority which had so long hermetically locked up all medical progress.

The physiology of Galen, which with slight modifications was the doctrine which was taught Harvey at Padua, honored the liver as the central organ of vegetative life.

The liver was the seat of sanguification and the origin of the veins, which were considered the only true blood-vessels, the arteries containing a mixture of spirits and blood. The heart, instead of being the active agent in the distribution of the blood, was a mere cistern; its sole function being the generation of heat and vital spirits.

Three kinds of spirits were recognized: the natural, the vital, and the animal. The natural spirits were located in the liver, the vital in the heart, and the more ambitious animal spirits claimed a residence in the brain.

The prevalent theory of sanguification, then, as summed up by Flourens, is, "the aliment taken into the body was converted into chyle by the stomach and intestines; blood was formed from this chyle in the liver; the vital spirits were exhalations from the blood in the heart, and the animal spirits were elaborated from the vital in the brain. Finally, the blood acquired its temperature from the heart,

and the heart found in the blood the aliment for its innate heat."

Before this hypothesis of the spirits required a modification of the prevailing belief, it was held that the only motion of the blood was simply that of ebb and flow, "like the tide of Euripus"—the blood in the respective vessels simply passing between the heart and the extremities without intermingling. The hypothesis of the spirits required the intermixture of the two kinds of blood, and Galen, drawing upon the imagination for his facts, wisely announces that the partition between the two sides of the heart is perforated.

What a commentary on the value of human evidence, when a long line of illustrious anatomists, including such as Mondini, who revived human dissection, Barenger de Carpi, and Le Vasseur came forward and confirmed from their own dissections the presence of these openings. In the doctrines so far examined there is but little improvement over that of the Chinese, who believed that the circulation of the radical humors and vital heat began at three o'clock in the morning, reached the lungs in the course of the day, and terminated in the liver at the end of twenty-four hours.

While Galen perpetuated by the weight of his great authority many erroneous views concerning the circulation of the blood, he really inserted the first round in the ladder of discovery when he experimentally proved the arteries to be carriers of blood instead of air, as the etymology of the word indicates.

Our next object must be to close the direct passage between the right and left hearts, the necessity for which communication we have already passed in review; and for this purpose let us call to our assistance Andreas Vesalius. Barengarius first expressed doubts as to the presence of this opening, but it was reserved for Vesalius to boldly announce that the auricular septum is solid, no less so than the rest of the heart,

and that not a single drop of blood can pass through the partition. It seems inconceivable that his master mind did not grasp the pulmonary circulation, upon the border-land of which he now stood, but Vesalius failed to recognize the importance of his discovery. It was reserved for another to light up the true pathway of the blood through the lungs—Michael Servetus. Servetus was born at Villaneuva, in Arragon, in 1557, and though educated for the medical profession, soon became involved in the bitter religious controversies of his time. Strange as it seems, his exposition of the pulmonary circulation is buried under a mass of theological rubbish in a book having for its title "*Christianismi Restitutio*," where it is stated the blood passes from the right to the left side of the heart by a long and wonderful route through the lungs, where it is agitated and prepared, becomes yellow, and passes from the arterial vein to the venous artery.

We have here not only the pulmonary circulation pointed out, but also foreshadowed the office of the lungs, and the work of that magic artist, oxygen, in painting blue blood with arterial tints. However, when we find Servetus still regarding the liver as the fountain-head of the blood, describing the brain as a cushion for the animal spirits, the nerves as a third class of vessels continued from the arteries, pointing out how the air passes from the nose into the ventricles of the brain, and how the devil takes the same route to the soul, there is abundant reason for skepticism as to the extent and accuracy of his physiological knowledge.

Servetus fell a victim to the intolerance of Calvin, and in 1553 was burnt at Geneva, and every copy of his works was committed to the flames with him. But one copy remains, and it is all scorched and blackened by the fire that burned its author. Is it not significant that the only surviving copy should have belonged to Colladon, one of the accusers of the unfortunate Servetus? There stands the book in the library of the Institute of France, all blackened and charred, with

the very passages underscored upon which Colladon accused Servetus, eloquent in its mute denunciation of the religious intolerance and bigotry of the age which gave it birth.

Although the pulmonary circulation was first suggested by Servetus, it is questionable whether the profession is indebted to him as much as to Realdus Columbus, who independently discovered the same truth six years afterwards. Columbus demonstrated the course of the blood through the lungs by means of vivisections, and taught it from his chair in the University of Padua, and to whom Harvey acknowledges his indebtedness. To him the pulmonary circulation was not a physiological hypothesis to illustrate a theological dogma, but was the logical deduction from anatomical facts.

Very soon Andreas Cesalpinus, the pupil and successor of Columbus, announces for the third time the discovery of the pulmonary circulation, it is claimed, independently of his illustrious teacher, though by this time the doctrine must have been common property. This peripatetic philosopher seems to have been far in advance of his contemporaries in his views of the circulation, and has frequently been credited with a knowledge not only of the pulmonary but also of the systemic circulation. Flourens, in his admirable little work on the discovery of the circulation, gives Cesalpinus the double honor of having been the first to give us a method in science and the first to point out the two circulations. We have already alluded to the recent claims of the Italian physicians, who, not content with erecting a monument to his honor, now propose, in a tablet in the University of Pisa, to brand Harvey before the world as a plagiarist.

Cesalpinus was born in Arezzo, Tuscany, in 1519; resigned the professorship of medicine which he held in the University of Pisa to become physician to Pope Clement VIII., and died at Rome in 1603. He was evidently a man of large learning, and ranked high as a naturalist as well as a physician. He undoubtedly did good service in the work of

discovery, as he was the first to apply the term *circulation* to the movement of the blood, and was acquainted with the important fact that when a vein is tied it fills below and not above the ligature. Skepticism as to his knowledge of the systemic circulation is certainly admissible when we find him ignorant of the valves in the veins, and see him explaining the distal swelling of a vein after the application of a ligature, in the effort of the blood to get back to the heart lest it be cut off and suffocated, and hear him speak of the flux and reflux of the blood. In order to give you a more correct idea of the justness of these recent claims, permit me to quote two passages from the great work of Cesalpinus, "*Quæstiones Peripateticæ*," for which, as for many other facts herein stated, I am indebted to Dr. S. Gamgee's recent essays in the *London Lancet*:

"In living creatures we see the aliment conducted through the veins to the heart, as though that were the manufactory of innate heat, and it having there attained its ultimate perfection, distributed through the arteries into the whole body by the action of the spirit (*agente spiritu*), which is produced in the heart out of the same aliment."

Again:

"Since, however, when we are awake the movement of native heat is outwards (that is, to the sensoria), but in sleep inwards (that is, to the heart), we must suppose that when we are awake a quantity of spirit and of blood is carried to the arteries, for from them is the passage to the nerves; but that in sleep the same heat returns to the heart through the veins—not through the arteries—for the natural passage into the heart is afforded by the vena cava, not by the artery. The pulsations are a proof of this; for these, in waking persons, are strong, violent, rapid, and frequent, with a certain vibration, but in sleep are weak, languid, slow, and rare. For in sleep the native heat passes less in the arteries; it forces its way into them with more violence when persons wake up. The veins are, however, just the contrary, for they are more swollen in sleep, but thinner when we awake, as is clear to any one who looks at the veins in the hand. For the native heat passes in sleep from the arteries into the veins through the communion of the mouths, which they call anastomoses, and thence to the heart. As, however, the overflowing of the blood to the higher parts, and its return to the lower parts, like the Euripus, is

manifest in sleep and in wakefulness, so a movement of this kind is perceived without difficulty in whatever part of the body a ligature is employed, or the veins are in any way closed; for where the through passage is denied, the streams swell up in the part where they are accustomed to flow."

We have here no conception of the heart as the cause of the blood's movement. We have again repeated the old error of a union of blood and spirit, and the absurd doctrine taught that the blood and spirit passes from the arteries into the veins only during sleep.

Is this the doctrine of the circulation as taught by Harvey? Is it upon such passages as these that the Italian school propose to placard Harvey as a fraud?

But even if Cesalpinus did comprehend the circulation, did the world learn it from him? As Dr. Gamgee well says:

"The testimony of Gaspard Hofman is conclusive in proving that while Cesalpinus was ending his long life in the serene atmosphere of the Vatican, the busy halls of Padua took little or no heed of the doctrine of the circulation which he had sketched so wonderfully. Born at Gotha in 1572, after studying at Strasbourg and Altdorf, Gaspard Hofman went to Padua in 1602, the self-same year that Harvey left it to return to England. The Nestor, Fabricius ab Aquapendente was still one of the chief personal glories of the Republic of Venice and of the University of Padua. Under him Hofman studied as Harvey and a generation of anatomists had done before him. Yet, when Hofman returned to Neuremberg, where he taught for forty years, he persistently opposed Harvey's doctrine, and was not even converted by the personal demonstrations with which he was honored by the illustrious Englishman. If the teaching of Cesalpinus had made way, if the doctrine of the circulation had been correctly taught in Padua after Harvey left it, and while Hofman studied there, would he not, learned and accomplished as he was, placed the fact on record?"

No, Harvey received all the obloquy which was heaped upon the new theory, and to him alone belongs all the honor.

The next name that we must mention in our chronicle is that of Fabricius ab Aquapendente, one of the best anatomists that the glorious old University of Padua ever had. Fabricius discovered the valves in the veins (1574), and thus

inserted the last round in the ladder of discovery, up which, in the fullness of time, Harvey walked to immortality.

William Harvey was born on the 1st of April, 1578, at Folkstone, in Kent. At nineteen years of age he graduated from Caius Gonvil College, Cambridge, and thus prepared, he enrolled himself as a student of medicine in the University of Padua, then the most famous seat of medical instruction in the world.

In 1602 Harvey returned to London and engaged in the practice of his profession. When only thirty-seven years of age he was chosen to deliver the lectures on anatomy and surgery at the College of Physicians, and in his first course of lectures (1616) taught the circulation of the blood nearly as we know it to-day.

For nine years longer Harvey continued to elaborate and prove his new theory before he gave it to the world in that remarkable treatise, "*Exercitatio Anatomica de Motu Cordis et Sanguinis*."

Remember that Harvey never saw the circulation, the necessity of which he demonstrated beyond a doubt. It required many years more for the microscope to reveal to Malpighi the wonderful secret of the capillary circulation; and a century and a half must pass before a Priestley unfolds the chemical composition of the air, and thus completes the story of the circulation.

Harvey was intimately associated with the Court of England, first as physician to James I., and subsequently as physician to the unfortunate Charles I., in which capacity we have already met him on the field of Edgehill.

We can not but feel that Harvey was fortunate in the age in which he lived. We have already seen how thoroughly the way had been prepared for his especial work. The discovery of the blood's circulation could not have been much longer delayed. He lived in an age of political, theological, and scientific excitement. He was a direct sufferer by one

of the fiercest struggles between throne and people that the world has ever seen. A Galileo was carrying the torch of regeneration into the dark domain of physics; Kepler was successfully interrogating the planets as to the laws that govern their movements; Cromwell, Shakspeare, Milton, Bacon, Robert Boyle, Dryden, and Ben. Jonson were numbered among his contemporaries.

When Harvey appeared, his mission was to apply, to grasp as a whole. The facts were already in the possession of his contemporaries, but it required the genius of a Harvey to mould them into a unit, to marshal this chaos of facts into the symmetry of a science.

But why detract from Harvey's glory on this account? Is not this the mission of nearly all discoverers? Let us look at the history of vaccination. The loiterer in the little church-yard at Yetminster, England, will there find a tombstone on which is written the following inscription: "Sacred to the memory of Benjamin Jesty, who departed this life on the 16th of April, 1816, aged seventy-nine years. He was born at Yetminster, in this county, and was an upright and honest man, particularly noticed for having been the first person (known) who introduced cow-pox by inoculation, and who, from great strength of mind, made an experiment from the cow on his wife and two sons in the year 1774." All honor to farmer Jesty! But does the recognition of Jesty's part detract in the least from the glory of Jenner, who, twenty-two years afterwards, without any knowledge of the experiment of his fellow countryman, crystalized into a life-saving principle the neglected gossip of the milkmaids of Sodbury and taught it to the world? This was the master-stroke of genius.

The question may arise in your minds, What was there left for Harvey to discover? I answer, in the language of Dr. Rolleston, Harveian orator for 1873, "Nothing less than *the circulation itself*. His predecessors had but impinged, and

that by guess-work, upon different segments of the circle, and then gone off at a tangent into outer darkness, whilst he worked, and proved, and demonstrated round its entire periphery."

Harvey's discovery was a true discovery in every sense of the word. He brought to his aid a large and exact knowledge of anatomy, both human and comparative—a mind thoroughly cultured—an earnestness of purpose and an industry which yield to no difficulties. His teaching was not a mere hypothesis, based upon an isolated fact or two, but was a demonstration complete and perfect as was possible with the then existing state of knowledge.

Harvey had sincere faith in the evidences of his senses; not reason or precedent, but *experiment* was the tribunal to which he constantly appealed, hence he made extensive use of vivisections.

"I propose to teach anatomy," he writes, "not from books, but from dissections." Like Descartes, who, when asked to show his library, took his visitor to an out-house, and pointing to the half dissected bodies of animals and birds, says: "There are my books—this is my library."

Harvey's essay on "The Motion of the Heart and Blood" is the epic poem of medicine. We have no time to enter into an analysis of its contents to-day, but I cordially commend to your careful attention this essay, one of the grandest specimens of inductive reasoning which the world has ever seen.

Fortunately we have an excellent translation of Harvey's works, by Robert Willis, made under the auspices of the Sydenham Society, 1847.

Harvey was particularly fortunate enough in living to see his doctrines universally accepted and taught, but it required twenty-five years to bring it about. We are told that no physician who was past forty-five years of age when the discovery was announced ever gave his adherence to it.

Gossiping John Aubrey tells us that after Harvey's book on circulation came out "he fell mightily in his practice; it was believed by the vulgar that he was crack-brained, and all of the physicians were against him." The same authority says "that although all of his profession would allow him to be an excellent anatomist, I never heard any that admired his therapeutic way. I know several practitioners in this town that would not have given three-pence for one of his bills (prescriptions), and that a man could not tell by his bills what he did aim at."

The years roll on, and we find this mighty philosopher, as full of years as he is full of honor and glory, as Sir George Ent found him, "Democritus-like, busy with the study of natural things, his countenance cheerful, his mind serene, embracing all within its sphere." Or, as Harvey writes of himself in one of his letters to Mardi, of Florence, "I, myself, though verging on my eightieth year, and sorely failing in bodily strength, nevertheless feel my mind still vigorous, so that I continue to give myself up with the greatest pleasure to studies of this kind."

William Harvey died on the 3d of June, 1657, in the eightieth year of his age; but the name of William Harvey will ever

"Stand like a beacon, throwing light far out
Over the rippling tides of centuries."

ART. V.—*Lectures on Insanity.* By DANIEL H. KITCHEN, M.D., Chief of Staff of the Hospitals on Blackwell's Island, New York. Delivered at Charity Hospital during October and November, 1876.

LECTURE I.

Without any preliminary remarks, we will proceed at once to the subject under discussion.

We well know the arduous and diverse duties of a student of medicine, confined, as they are, to within a very short

period of time. I will at once ease your minds by the declaration that, although I would impress upon you the great importance of the subject, I shall not necessarily magnify it, but confine our remarks to facts, and what I believe to be simple truths and principles.

Insanity as a name, not implying, either etymologically or otherwise, any thing to lead to a proper idea of this subject, gave rise in our own, as well as in foreign languages, to legions of synonyms, none of which, however, has improved our real knowledge, but rather led to confusion of a proper definition of the disease, wherefore insanity has had as many definitions as it had authors. The following, which is simple, and I believe most reliable, is one which will not easily lead you astray.

Insanity is a disease of the brain, affecting the mind, by which there is a change in the person's mode of acting, thinking, and doing things. This simple but comprehensive definition will lead you at once and safely over a large stumbling-block and Babylonian confusion—the great *Mistura Diabolica*—of our subject: I mean its classification. Persons sound in body, acting, thinking, and doing things during their path in life in sound coherence, with impressions correctly received by external influences through the nervous system, accompany their acting and doing things with a show of either depressed or exalted feeling, exactly in accordance with these true impressions so received, only modified in degree by their force of will. If these impressions and subsequent demonstrations of acting, thinking, and doing things have lasted for a specified time, or if they have been inordinate in force, a relaxation of powers of reception and reciprocate efferent action is the result, sound sleep, but which we may here call as well a physiological dementia. Let us look now at the other possible side. Suppose persons receive by existing influences, through their nervous system, impressions incorrectly, or that the

brain creates an impression, although no influences exist nor have been brought to bear upon their nerves, and either of these impressions constantly repeating themselves or continuing in action, so that the force of will over them ceases, although understood to be erroneous, the first result will be a depressed feeling or melancholia, which cause and effect constantly re-occurring or continuing, sorrow and depression give away to exaltation and mania. This frenzy gradually exhausting the life-force of the brain, its function as the recipient of impressions and center of reflex action and thinking ceases, and we come to the third and last stage, pathological sleep, or dementia. Now, as these three stages constitute a case of insanity, it is not to be understood that every case runs through these three stages. An insane person may either get well or die in the state of melancholia, or that of mania, or dementia. This being the case, we can assert that insanity, when running its full course, passes through the three stages, but also that it may be classified, so as to say that this or that case is one of melancholia or depression, or of mania or exaltation, or of dementia or mental weakness, and that the disease may terminate fatally or favorably in either. We would not scientifically say, this man died of mania, but of insanity, just as we would not fill up a death certificate of a man having died of pneumonia with, Cause of death, hepatization of the lungs. Aside from the three phases of insanity we have to consider a fourth, without associating it with the other three, as it neither has the same pathological progression and prognosis, nor can the same general treatment be permitted—I mean general progressive paralysis or paresis—a disease where the physical and psychical forces of man join hands, wasting steadily and gradually away, till the last cinder of their existence dies out, leaving but the wreck of a once active and reasoning man to the yawning grave.

Before going further, we will present a few remarks on the

history of insanity. It was known to the ancients, and we have medical records of cases from Hippocrates and Galen to the present time. In ancient times and the middle ages the general mass of the people were so infatuated with superstitious notions, that no scientific research, even when successful, could be brought to light. The poor insane were not only subjected to the most barbarous treatment, but often looked upon as evil spirits or sorcerers, and, after most inhuman tortures, burnt alive at the stake. Imagine a poor lunatic, who unfortunately conceives the idea that he is a prince, or that he owns this or that property, to be put to the rack and tortured to make him confess the contrary of what the very nature of his disease forces him to assert. But not only the ignorant populace and superstitious priesthood exercised this cruel treatment, but the more enlightened and even medical celebrities looked with fear upon an insane individual, and used all barbarous means conceivable to make the poor creatures act and do as they would, which these unfortunates were of course unable to do; and when all efforts of force proved of no avail, they chained them to the walls of prison cells, fed them like swine, till merciful God ended their tortures by death. Even Cullen treated his patients by forcible opposition and coercion. It was left to the great Pinel, not a hundred years since, to bring about a complete change in the aspect and treatment of insanity, which was so successfully followed up and elucidated by his successor, Esquirol. Since then insanity is in all civilized countries looked upon as a disease, like any other, and in nearly all institutions for the insane these poor, afflicted fellow-beings are now treated with the utmost consideration.

Arguing from the stand-point that insanity is a disease deserving the same consideration which we would give to any other, we will divide the causes, like those of other ailments, into—1st, Predisposing; 2d, Exciting. The old no-

tion, still adhered to by some writers, of arranging the causes into *physical and moral*, I consider unsound and untenable. A cause of a disease, whether of physical or moral character, will only be a cause for such as are susceptible of the development of it. If a man becomes insane by a sudden mental shock, say sudden loss of a parent, his brothers and sisters, however similarly afflicted, escaping, it shows that the susceptibility to insanity predisposed that man to the alienation of mind, while it did not affect his kindred. That man would undoubtedly have suffered similarly had he strained his mind by a continued effort to find the square root of a circle.

When we know that among barbarous nations the number of insane is comparatively much less than among the civilized, theoretical considerations that the climate, form of government and religion, the general occupation and habits which regulate the state of civilization, must more or less influence a feverish activity of life, and, therefore, of the brain, are certainly allowed. When we consider further, that among certain nations, whose multiform industries and constant eager aspirations for competition in all acts of modern civilization, insanity is most prevalent, we are forced to assume that when we cultivate passions and strain our minds for such objects it predisposes us more than others to brain diseases affecting the mind.

Taking this stand-point, the increase of insanity, as proven by records and statistics during the past twenty-five years, we have good reason to assume to be due to progressive mental strain, together with the inventions of so many unnecessary and unnatural auxiliaries for our luxury and debauch. Thus we pay our debt for progressive civilization.

In regard to frequency of occurrence the United States ranks first; then, in order, Ireland, France, Germany, England, etc.

That the ova of the female and the spermatazoa of the

male are the physiological fruit of living human beings, and that the proximate principles of which they are composed are derived from the blood of the respective individual, no physiologist will deny. Taking this as a basis, it has been argued that insanity is transferred from parent to child during conception. While I do not deny the influence a poor or abnormal state of the blood of the parent during conception may have on the offspring, I certainly will not admit the exaggerated theories of hereditary causes, some of which almost lead to a presumption that because the father was an idiot the son must be weak in mind. How many thousands have a consumptive father, and otherwise unhealthy mother, who go to all the funerals of their medical attendants! How many fathers have the brain of a Humboldt, and how many mothers the master mind of Queen Elizabeth, but their child in an asylum! How many instances have we where the parent's faculty for scientific researches or mechanical genius was prominent before marriage, during and after marriage, probably calculating for the chances of finding the next ultimate chemical principle, while his animal nature looked for legal descendants, and still you can not make of his son any thing but a hod-carrier or a dish-washer! How often is it that both father and mother are insane? Very seldom indeed. Why, then, is it to be presumed that when one of the parents is of unsound mind this one-half of the vito-chemical combination must be received with that strain upon it by the other half in the formation of the new being? *i. e.*, if in a bottle of sulphuric acid a few drops of nitric acid have been accidentally mixed, will the nitric join hands with the sulphuric acid and make a new compound with a salt of lead? Certainly not while there is any sulphuric acid left. Nor will a vine from the Rhine produce good grapes on Blackwell's Island. It is true that statistics show that as many as thirty per cent. of those admitted in hospitals for the insane can conjure up among

their forefathers some one who showed a taint of lunacy, but how many per cent. of those dying of pneumonia, or apoplexy, or gastritis, or in parturition, can show among their fathers, mothers, sisters, brothers, aunts, uncles, first and second cousins, a whole squad having similarly been transferred? Let us, then, look upon *hereditary predisposition*, so called, not as a direct cause of insanity, but say that in man a diathesis for this or any other disease may exist, which, when brought in contact with or influenced by adequate existing outward influences, will more likely develop such disease in that person than if such a diathesis had not existed. In consanguineous marriages being a cause of imbecility or idiocy I do not believe. Not only the Scriptures, but present observations, indicate the soundness of this view. A distorted pelvis, unscientific use of the forceps, undue traction on the child when the diameters of the fœtal cranium do not correspond with those of the pelvis—in fact, any thing producing compression of the brain of the fœtus during parturition, and, particularly, when resulting in a distorted or unsymmetrical skull, must be taken to predispose the coming being to insanity.

On the subject of sex, statistics, observations, and opinions are so conflicting that we may safely assume that among a gross of insane persons six dozen are males and seventy-two females. The time when man is most exposed to exciting causes is naturally the one when the mind and body are fully developed, and thereby most active; whence it arises that the greatest percentage of patients brought to insane asylums ranges between the ages of twenty-five to forty-five. Before the age of puberty insanity occasionally but rarely occurs. Even so in the aged; and when occurring partakes more of the type of eccentricity and second childhood, or senile dementia, than of real morbid, mental alienation. Some periods of life offer more chance for exciting influences to take hold, and this holds good in insanity as well as in

other diseases, such as dentition, puberty, climacteric period, etc. Persons doing more head-work than hand-work are more liable to insanity and less likely to recover. Town and city life predisposes more than country life, probably on account of the former being more exposed to vice. For a similar reason more unmarried people are insane in proportion to their ratio of population; never married, forty-nine per cent.; widowed, eleven per cent.; total unmarried, sixty per cent.; married, forty per cent.

As a warning to parents, it may be stated here that harsh and neglectful treatment of a child, inducing him or her to seek seclusion, or too much leniency in the permission of reading light literature, particularly exciting and licentious novels, lead to a state of mind easily kindled to exaltation. Further, should either parent have any failing, moral or otherwise, especially non-control of the will, such must be carefully hidden from the view of the child. Want of a proper attention to prevent constant exposure of a parent's mental failings is often a far greater cause of an offspring's insanity than the so-styled hereditary taint.

Not enough caution can be prescribed to keep a person predisposed to insanity from any of the exciting causes; it is like keeping an electric spark from the predisposing chemical affinity of hydrogen and oxygen.

Intemperance is far the most frequent of the causes of insanity. Not only that intemperance is very often the direct and proximate cause, but its influence is also remote. I must urge you, gentlemen, to use your utmost efforts to stay this bane of society. Your influence as physicians on individuals directly is far greater than other professions, and you can, by constant efforts, not actually stay, but certainly, to a great extent, diminish the occurrence of this passion and vice. It is not only the frequent cause of insanity, but also the barrier to successful treatment of all other diseases. You will meet with it in all nationalities and governments,

the civilized as well as the barbarous; in all kinds of society, at court amid the aristocratic and rich, and among the lowly; it is the enemy of mankind, the destroyer of happiness, individual and domestic, co-partner of all crime, from misdemeanor to murder; it is the creator of debauchery, the father of poverty, and the chief working element of the devil. Men do not dare to defend it, yet it is tolerated in every social sphere, and I fully believe has caused more anxiety and disease than all the other causes combined. You can not arm yourself with a better weapon to combat disease than by studying the many excellent works on alcoholism. In insanity, intemperance is so universally acknowledged as a prominent cause that nothing remains for us to consider but the intensity of the effect of the various alcoholic stimulants upon the healthy condition of the brain. It has been distinctly noticed that in countries where no wine grows, and where distilled liquors are but sparingly used, but where beer, ale, and other malt liquors are the basis of luxurious beverages, a much smaller percentage of deleterious influences upon the brain has been noticed than in other localities. In other words, among all evils arising from the use of alcoholic stimulants, those from malt liquors are the least. Next come localities where wine is cultivated in sufficient quantities to preclude by their plenty and cheapness the frequent use of distilled liquors, and we may here note that natural wines are by far less hurtful than the artificial trash unfortunately so frequently used in this country. Of the two kinds of natural wines, it has been found that the *red* is not so inimical to health as the *white*; also, that the acid wines are less so than the heavy, sweet varieties. In countries where wines do not grow and are too expensive, also in cold climates, where malt liquors have by habit been banished with fearful rapidity through the use of distilled liquors, insanity caused by intemperance not only overshadows those localities previously mentioned, but the disease has

kept step in increase with the increase of intemperance. Distilled liquors and such as are manufactured from spirits obtain their alcoholic constituents generally from grain or beet-root. If these products are scarce, spirits are often distilled from cider, and M. Lunier says positively that alcohol from cider is more pernicious than that from beet-root or grain. Among all artificial stimulants absinthe is decidedly the worst, not only that when taken in the same dose and strength as other spirits it produces intoxication much quicker, but also that it has a very pernicious influence upon the nervous system. The order in strength of influence upon insanity would, therefore, be as follows: 1st, absinthe; 2d, brandy, gin, and whisky; 3d, fabricated wines and cordials; 4th, natural wines; 5th, malt liquors.

A jocular American, but habitual drinker, once stated to me, "I don't see how from your beer I kept sober, from Rhine wine I was tipsy, from Cognac I got drunk, and when I took absinthe I became crazy." Other stimulants, such as opium, Indian hemp, and other narcotics are also exciting causes of insanity. The use of the former is rapidly on the increase, and its use as a medicine to the insane, as useful as it may be, must be guarded, as patients often complain of sleeplessness, so as to obtain its effect, they having become, or have been before, habitual opium-eaters.

Although the relation which general sexual vice bears to insanity can not be accurately estimated, especially in insane prostitutes, there is no telling whether the cause was in the vice, or in concomitant intemperance, or remorse and unkindness, etc. One kind, masturbation, shows itself too plainly in hospitals for the insane, as not to count as but too frequent an exciting cause of the disease. We need only visit the wards of asylums where the demented are kept separately, and regard these unfortunate victims, who, although now reduced, in regard to ideo-reflex action, to the vitality of an oyster, still continue, by animal-like instinctive

habit, that vicious practice. By the following points you may easily recognize this state of circumstances: Patients are generally more or less imbecile and of shy habits, from fear, dread, and suspicion. We find a scared look, an irregular circulation; these patients are usually very irritable, and are influenced by painful delusions which are irritating and depressing; skin cool, particularly the hands, and covered with perspiration; have false ideas of a peculiar nature, which are suggestive of every thing insulting and outrageous.

A masturbator, when insane, construes every thing as vile, indecent, and wretched; he is often watonly mischievous; he sometimes commits acts of violence on some person whom by fancy he supposes may have committed a wrong; the look is very unsteady, and continued restlessness shows the nervous excitement under which he or she labors. Some cases have the above symptoms not so distinctly marked, but suspicion should always be excited when newly arrived patients soon search secluded corners in the ward, object to sleeping in a room with others, and avoid company generally. Some patients are so unrestrainable in their vice that in asylums where the camisole has quasi been abolished, it must be used as an exceptional measure, merely to keep their hands confined. It would probably be well to remark here that on account of the suicidal and homicidal propensities of the masturbating insane a special care should be exerted in watching over them.

We now come to epilepsy, which constitutes about six per cent. of the cause of insanity. It often begins during infancy, in peculiar kinds of convulsions, which are characterized by the suddenness of loss of consciousness, and often preceded by a spontaneous temporary nettle-like rash, which suddenly disappears before the outbreak of the convulsions. When infantile epilepsy is the cause of insanity, the latter does usually not show itself until after puberty.

Any injury to the head or spine which produces a pressure or a wound in the convolutions of the brain, abscesses, sanguineous or serous exudations, with apoplexy, paralysis, sun-stroke, and, in fact, almost any of the affections of the brain, particularly when caused by injury, form part of the cause of insanity.

Varieties of fever, particularly, however, the typhus, typhoid and inter-remittant fevers, are often producers of insanity, especially during the eruptive stage, when the rash either does not appear at all, or after appearance recedes suddenly. Various other acute and chronic affections sometimes precede insanity, and are often, and, probably, sometimes correctly, counted as among its causes. Since Hebra's minute investigations of skin diseases, more attention has been drawn to this subject, and particularly, lately, a most remarkable connection with, or intimate relation to, the nervous system has been noticed. Some have traced many varied functional nervous disturbances to follow a suppression of skin diseases, and as mental disorders have often disappeared upon reappearance of a rash or other eruption, it is worth the while to research this pathological chapter of the skin in its relations to insanity. As it is very often difficult to discern between cause and effect in uterine disease, their percentage as a cause can not well be given. But that suppressed menstruation, fluor-albus, displacement of the uterus, and other uterine ailments, often favor an outbreak of insanity there can be no doubt. In a large majority of these cases hysteric convulsions accompany the mental alienation. Beware, however, of imposition in regard to this cause practiced upon physicians by insane masturbators.

We have now finished that part of the exciting causes usually called physical, and approach the so-called moral causes. Authors upon insanity have a habit of expostulating, in detailed chapters, on every one of such causes. In my opinion, they are all alike in their effect, and, as their

names are legion, a very handsome 1,000 pp. 8vo. volume could be written upon that subject. Now, let us see whether we can not settle this question in a practical manner, without going into any family grievances, political excitements, religious ecstasies, and war troubles about it.

The brain is the locality and domicile of the highest functions of the nervous system, where all intellectual reflex actions center. If we overwork or strain the physical functions of that brain, be it by a sudden shock, by continued excitation, or by overtaxation of its physical ability, it will lose its balance, and through it all control over exito-motor actions. All moral causes act just that way upon the brain, and be their name whatever it may, they influence the brain, as stated above, by straining its physical function, and *that is all*.

Try if you can make any thing else out of the following most frequently discussed moral causes: Domestic trouble, domestic grief, reverses of fortune, religious anxiety and excitement, disappointed affections, fear, fright, intense study, political excitement, war, poverty, sudden joy, wounded feelings, ambition, jealousy, exalted self-love, high responsibilities, shattered hopes, and any number of etceteras you may wish to append.

The causes of general paralysis are, usually, only physical intemperance, high living and debauch; but on this subject we will discuss details under the proper chapter.

As the brain, like every other organ of the body, must retain its organization intact for a perfect execution of its functions, you will see how necessary it is to protect this supreme center of life from any accident, and because it, like every other organ, receives its proximate principles for the integral parts from the blood, any poisoning of the latter (alcohol, syphilis, etc.,) will pathologically change it, and thereby disturb its functions. Post-mortem examinations of the insane have demonstrated physical changes in the

brain. These changes are of a varied character, and of varied extent, they even are not visible in all cases except with the microscope. This latter circumstance must, however, not mislead us to an idea that no pathological changes have occurred. We know how delicate the structures of the nervous system are, and how much we have to fathom to get a correct understanding of the physical structure and chemical proximate principles of the brain in its physiological action, that we must concede, with Dr. Maudsley, in thinking that the subtlety of nature may exceed the subtlety of investigation.

Physiological research has demonstrated that the higher the intellectual functions the further towards the periphery of nerve centers do we find their work-shops. It is, therefore, not to be wondered at that in cases of purely mental, without motor disturbances, pathological lesions must be looked for and are found nearest the membranes covering the periphery of the brain. Of the most indefatigable and shrewdest observers of pathological changes peculiar to insanity is the celebrated Schröder Vander Kolk, and he, after more than thirty years' experience, says: "I do not remember to have performed, during the last twenty-five years, the dissection of an insane person who did not afford a satisfactory explanation of the phenomena observed during life. On many occasions I was able accurately to foretell what we should find." In our own State we owe to Dr. John P. Gray a debt of gratitude for his scientific researches into the cause of insanity, he being the first in America to commence a correct system of pathological investigations.

But not only do we find pathological changes in the brain and its membranes, but also in other organs of the body. Griesinger and Brown-Sequard have demonstrated by beautiful and remarkable cases, where diseases of the respiratory organs or the alimentary canal, as well as of excretory organs, were the exciting causes of insanity, that the supreme

cerebral centers may suffer secondarily from some irritation in some other part of the body. Dr. Maudsley asks, but leaves unanswered, why the nerve centers should be so secondarily affected at one time and not at another? This we can answer by other questions. Why do some children having intestinal worms suffer from convulsions while others do not? Why does dentition produce, sometimes, derangement in the alimentary canal, and sometimes not? Simply because these organs were susceptible to disease, and needed only even a distant irritation to be roused to pathological changes. I can not see why some learned authors always forget that the brain is an organ, and if physically weak will become diseased by any exciting cause, if physiologically strong and healthy may withstand the severest shock.

As easy as it is to declare that the brain shows signs of morbid anatomy after death of the insane, as difficult is it, however, to link the character and locality of the pathological lesion with the stage and character of insanity.

Griesinger, Vander Kolk, Skae, Sankey, Gray, Kempster, and others have done much to clear the débris of general observation, but much labor must yet be used to establish, to a reasonable certainty, a certain locality of the brain with a specified and defined morbid change of the very many different ecstasies and depressions occurring in the insane.

Let us review, in a general way, the lesions of the different parts of the nervous system, reserving their special import when we argue the stages and their varieties.

1. *The membranes.* (a.) The dura mater has rarely been noticed to be affected; if so, it occurs in acute cases, and is thickened. (b.) The arachnoid is often opaque and milky; sometimes on the external surface granular. Hyperæmia, with effusions into the spaces, has also been alluded to by Griesinger. (c.) The pia mater is more frequently the seat of lesion than the other membranes. The pia mater is frequently found injected, and sometimes thickened and adher-

ent to the brain substance, while its two layers are separated and filled with exudations and debris. A thickening of the pia mater precludes nearly always a similar change in the arachnoid. Fibrous exudations and tuberculous deposits are also noticed. Of course in cases of hyperæmia we find the blood vessels injected.

2. The *epithelial* layer is sometimes the seat of exudations and of crystalline deposits of phosphates.

3. The *blood vessels* of the grey matter being in proportion of five to one of the white cerebral substance, they become an important object for pathological observations; the importance of a proper blood supply to the gray matter is so obvious that the investigations of its vessels is a primary necessity. An ocular inspection of the larger and smaller vessels to determine an engorgement or anæmia, should precede a microscopic examination, when, according to Dr. Bucknill, the following anomalous conditions may be found:

(a.) Hypertrophy of the muscular and (circular) fibrous coat of the arteries, undoubtedly due to overwork of the arteries—*ubi irritatio ibi fluxus*. A thickened condition of the sheath or hyaline membrane, with deposits in the sack it forms at the bifurcation of vessels, a very frequent occurrence, and associated with microscopic aneurisms, and sometimes emboli. Along with this, proliferation of nuclei, abnormalities and deviations in the directions or normal course of arteries, have been noticed. Also, a pigmented appearance of the arterioles, and last, but not least, a dilated condition of brain substance surrounding the vessels, probably due to exudation of lymph and waste matter, the latter having a toxic influence upon the cells.

4. The neuroglia, or cementing substance binding true nerve-matter together (Virchow), undergoes also the general pathological changes of hardening, atrophy, and degeneration. The hardening, generally called sclerosis, may be a general brain occurrence, or disseminated, resembling gray

degeneration, often found in brains of the chronic insane, or else *miliary*, a disease of the neuroglia of the white matter; and lastly, a colloid found in both white and gray matter. To these may be added *simple atrophy* of neuroglia, as found in extreme cases of senile insanity.

5. As in neuroglia, we also find degeneration in the cells proper, (a) either as a simple atrophy, (b) or pigmentary, granular or fuscous degeneration, (c) calcification, (d) hypertrophy. Aside from these, *fatty degenerations of nerve-matter generally*, may be alluded to and taken *cum grano*, it giving us no insight to any special mental alienation.

In regard to the *weight of the brain substance*, Dr. Sankey has made some interesting observations. He compared the weight of *cerebral substance* to that of the cerebellum and pons varolii. Normally this is 7.8 to 1; in acute insane cases, 6.49 to 1; in chronic, 5.77 to 1; in epileptic imbecility (five cases) and in dementia, 6.45 to 1; in general paresis (fifteen cases), 6.54 to 1.

General Prognosis or Termination of Insanity.—An old maxim that the earlier the stage when a disease is presented for treatment, the greater the chance for improvement and recovery, holds good also in insanity. Therefore, melancholia being the first stage, it offers the greatest hopes of recovery; mania already less so, and dementia may be set down as usually incurable. One undoubted truth exists, that the sooner the patient is brought to the hospital, the greater the probability of his or her recovery.

The question of percentage of cure of course arises, and is somewhat difficult to answer, because the statistics are taken from institutions, some of which receive into their wards old cases from alms-houses, prisons, etc., others more than their ratio of delirium tremens, while some take only recent cases. The following I think to be an honest statement of probable cures: When treated from the beginning of the disease, 70 per cent.; when taken to hospital after first and before four

months, 60 per cent.; when taken to hospital after three and before seven months, 50 per cent.; when taken to hospital after six months till one year, 20 per cent.; when taken to hospital after one year, 10 per cent.; chronic cases of mania without dementia, 5 per cent.; dementia, none.

Some phases of insanity may modify the above average, viz., when insanity begins before puberty, the chance of cure is small; when the temperature of the body rises several degrees, prognosis is unfavorable; indications of motor paralysis are an evil omen; complications with epilepsy almost sure death; puerperal insanity, and such as arises from disorders of the uterus, and hysterical insanity, give much hope for recovery; general paresis leads generally to the grave; slowly developed insanity is of less favorable prognosis than when of rapid order; the causes of intemperance and self-abuse are also unfavorable, and any mechanical injury to the brain, of course, also.

TRANSLATION.

Notes upon Salivary Calculus by Professor RICHET, Surgeon at the Hotel Dieu Hospital: with an appendix by Professor SIRUS PIVONDI, of Marseilles. Translated from the French by BARNARD ELLIS, M.D., Alumnus of the College of Physicians and Surgeons, New York.

GENTLEMEN: You have just seen, with me, a case of *stone under the tongue*. I use this term, though a little unscientific, so as not to prejudice the diagnosis, as I propose now to give you a complete history of those productions which are usually designated salivary calculi.

But first I must explain the case before us.

This patient was sent to me by my colleague, Dr. Frémy, whom this man, a merchant, had consulted some days before. He says this affection began in June, 1870, by a pain under

the tongue while eating, and being uneasy about it he tried to find out the cause, first with the tip of his tongue, then with the finger he distinctly felt a tumor on the floor of the mouth. A doctor who was called, prescribed a leech, applied locally, which brought some relief, but only for a few weeks; for in August he again felt the same pain, accompanied this time with a tumefaction of the sub-maxillary region, which was dissipated by the use only of discutients and cataplasms.

During the war he entirely forgot these phenomena, but in 1871 he again felt these pains come suddenly, and with a noticeable swelling of the sub-maxillary region. The acute symptoms soon disappeared, but the enlargement under the tongue remained. During the next four years the patient felt no sort of constraint nor pain. It is said, gentlemen, that pathological affections produce continuous symptoms. Notice, however, calculi, and among them the salivary calculi. The symptoms by which they reveal themselves are nearly always remittent, and the proposition, therefore, made in general terms includes an error. However that may be, after this long quiet, in 1875 the patient felt new pain and new difficulty in mastication. He then applied to Dr. Frémy, who sent him to me, and I at once recognized a stone under the tongue. The phenomena presented are, first, the constriction and pain. When he speaks he quickly feels a painful sensation under the tongue, especially in pronouncing certain words containing lingual consonants. He suffers, also, in eating. But remark, that this pain is not under the jaw, like that which indicates a retention of saliva, causing a distension of the sub-maxillary gland. This phenomena, which we see in many cases, is wanting in this one, and the pain and constriction which accompanies eating and speaking is seated under the tongue. They ought, then, to be related to a purely mechanical trouble in the functions of the tongue.

Besides, the pain spreads sometimes to the four inferior incisors and to the corresponding parts of the lip.

This symptom might make us suspect the abnormal development of a tooth, instead of there being a stone, as in the case of Stansky, which I shall recall to you, and which offers an example. You see it is not nothing; retain, nevertheless, the seat and the characters of this pain.

Physical examination shows in the left sub-lingual furrow a long tumor, extending from the symphysis of the chin to the most distant part of the buccal floor. It pushes the tongue upwards and to the right, and Wharton's duct is deviated out of place. It is covered with the mucous membrane, which is red and injected. Nothing can authorize, however, the assertion of Heller, a learned man, but not a surgeon, that this vascularization of the mucous membrane gave place at the time of the operation to abundant hemorrhages. The explanation of this manifest error should be found in some accidental complication which presents itself in a given case.

The tumor is hard, neither elastic nor fluctuating; the mucous membrane is attached directly upon it, without any interposition of liquid; we can assure ourselves of this by placing our finger on it in the mouth and another finger under it in the sub-hyoïdean region. Finally, in exploring the mucous membrane with a pin, we are soon arrested by an absolute, calcareous, strong resistance. What are the relations of this tumor with Wharton's duct? Placing the patient in a strong light, exploration with a very fine probe proved the existence of something in this canal. Scarcely had my probe entered when I felt a special sensation analogous to that in touching a vesical calculus, a sort of mucus friction, which you felt also. It is thus certain that our stone is in this duct.

What, now, is this concretion? A celebrated surgeon, in a theory to which I shall return, has assigned, as the origin of these stones, the production of calcareous deposits in the cavity of a ranula. But, you see, that the ranula is not

developed at the expense of the excretive duct of the sub-maxillary gland. It is not a cretaceous deposit in a ranula with which we have to do, but a tumor really developed in Wharton's canal, a real salivary calculus; unless, indeed, it may be produced outside the walls, and there is consecutive ulceration. But this hypothesis, unlikely *a priori*, is not justified by any fact.

But how is it that so large a tumor has not arrested the flow of saliva? When we see a simple inflammation of buccal mucous membrane, caused by aphthæ or thrushes, it is characterized by swelling of the gland. Here we are astonished to find nothing of the kind, and to see, after some former unexpected symptoms of retention, four years elapse without the least accumulation of saliva behind the calculus. Perhaps—but this is a simple hypothesis—the calculus is cunaliculated; perhaps—and I shall cite to you some examples of this kind—it presents upon the surface grooves or furrows which permit the saliva to flow.

Finally, gentlemen, I ought to explain the intervention necessitated by this affection. What shall we do to relieve the patient of his calculus, and so of his pain? Sir Astley Cooper, in a like case, divided Wharton's canal with a cataract needle as far as the calculus, and drew it out with forceps. Nothing is easier; but why encumber ourselves with a manual operation which serves no good purpose? Is it not simpler to cut directly down upon the calculus, and extract it by this large opening? I search in vain for the advantages of Sir Astley Cooper's procedure. It appears to me, on the contrary, to present the inconvenience of an incision of the canal much extended and more difficult of performance. The abnormal orifice exists in each case alike; and, moreover, what are the difficulties? It thus appears to me useless to complicate, at pleasure, a manual operation. I shall incise the mucous membrane over the calculus, following its long diameter, rock it in its place to loosen it, and withdraw

it with forceps; and this operation is so simple as not to need the use of chloroform or after treatment.

You have seen, gentlemen, how simple the operation is, and it has proved that the cavity was entirely free of liquid. The mucous membrane was thickened to nearly one-sixteenth of an inch, and you can comprehend how long a spontaneous ulceration would be in becoming established, and how difficult would be expulsion through such a fistula.

I was obliged to enlarge my incision, and, with a fluted sound, I rocked it, not without some pain, because it was very adherent. You see it is grooved, and these grooves were filled with the folds of mucous membrane, as we see calculi in the bladder sometimes fixed between the laminae of that organ. After the operation there was no escape of liquid. Since then, a slight sore throat has developed, but without connection with the operation, and the orifice is already contracted. To assure my diagnosis, I have introduced Nos. 1 and 2 of Bowman's probes, found the pouch open, and no other calculus in it.

What becomes of the wound? The observations upon this point are silent. The patients relieved of their calculus go away, are not followed up; but our patient will return from time to time, and we shall be able to see whether either the pouch or the canal becomes closed, or, on the contrary, whether a permanent fistulous tract remains.

Gentlemen, I have promised you to seize this occasion to trace the history of salivary calculi; to give the historical discoveries and the most important points upon this surgical question.

This compensating of our case appears to me to be much more useful than if the materials were abundant—if there were observations, memoirs, or theses to be found where I searched for the materials for this lecture.

The classical literature upon this subject gives, for the most part, but a much abridged description of salivary calculi.

The history of these productions is not new. Without going back as far as Hippocrates, we find in an Arab author, Avenzoar, cited by Dr. Clasmadene, some words worthy of remark: "I have seen," says this physician, "a man who had a stone under his tongue; it prevented him from speaking and eating; they removed it and he was cured."

Ambrose Paré, in 1556, related two interesting cases. The first case was of a Spaniard, who had a tumor in the throat. As he had difficulty in speaking and in masticating his food, this celebrated master explored the mouth and found a hardness under the tongue. Another time Paré was called by a doctor, Regent of the faculty, to see a certain Captain Augustin, a king's engineer, affected with a salivary calculus. As in the preceding case, he removed the stone and the patient recovered, but Paré added that after the operation one calculus remained, which they could not well detach. Later these cases multiply; the stones under the tongue were considered as "grenouillettes," or petrified ranulas, to use a term which was then classic. They believed that in giving this pathological explanation they had constituted an important progress in the knowledge of these stones. Notwithstanding in 1655, Wharton had discovered the canal which bears his name; from 1679 to 1682 Rivirius and Bartholin had described the sublingual glands and their ducts.

You may believe that these anatomical discoveries went far to throw new light upon the nature of stones under the tongue, yet nowhere were they called salivary calculi. Some authors, however, had a vague suspicion of the truth.

We find in a collection of the time in the library of Manget, in 1721, that Drelincurtius (modern, Drelincourt) having extracted a calculus, asked himself if it were not situated "in ductu salivæ," and he waited to support this opinion by a second case. J. L. Petit hesitated, and did not know whether he ought to believe in the petrification of ranulas; but soon, in a memoir which made an epoch in this litera-

ture, Lonis wrote a history of ranulas, and placing in error the seat of them in Wharton's duct, he drew no conclusions touching the production of salivary calculi. For whoever had wished to refer to the observations, the origin of these stones had since then been established. In fact, we find in a very complete thesis, in the inauguration of Christian Scherer in 1837, "*Disputatio de calculis ex ductu salivali excretis*," the following fact: A barber, shaving a customer, as was the custom, put his thumb in the customer's mouth, and ascertained thus fortuitously the existence of an induration, which was a salivary calculus, and which came out spontaneously some time afterward, and was followed by the expulsion of a second one.

But let us return to the memoir of Louis. It served to increase the obscurity which for more than a century reigned over the question, in spite of the thesis, nevertheless so clear, of Christian Scherer.

Thus, Sabatier, in publishing a curious memoir upon a calculus, in which Fourcroy found the principles of saliva, and which had caused retention of saliva, was under the influence of the ideas of Louis, as were also Boyer, Richerand, and Murgolin, and by a singular misunderstanding of the reality, they placed the ranula in Wharton's duct and the salivary calculi outside the salivary passages.

It was only in 1820 that the memoir of Fardean and Saurmur finally opened definitely, the eyes of surgeons, and that they admitted the existence of Salivary Calculi in Wharton's duct, the same as in Steno's duct.

Soon, these cases multiplied themselves. Numbers of cases were presented to the Surgical Society, to the discussion of which we owe the light which was thrown on this subject.

In 1845 Duparcque published in the *Revue Medicale*, an interesting article upon this point.

In 1855 Closmadenc made it the subject of a thesis, under the presidency of Malgaigne. I cite also, the work of Du-

Morel in 1856, and the thesis of Cronzet over the sustaining of which I presided, in 1874.

The thesis of Closmadenc contains 112 cases, a number much less than we actually possess.

In 81 of these cases, he has mentioned the sex; 62 men and only 19 women. These Calculi affect men oftener than women, and are particularly an affection of adult age. We have not observed them before the twentieth nor after the sixtieth year.

To complete these etiological inquiries, we must ask what can be the direct cause of these concretions. The saliva contains normally but a very small proportion of mineral salts, and we should suppose that it was not at the expense of these that the concretions were formed. And yet this conclusion is erroneous, as I shall show presently. It is these salts which furnish the development of these calculi, but often a foreign body determines the situation and forms the nucleus of the concretion.

In fact these calculi are often found in the herbivora, and almost always in an elongated form, as in their center we find habitually a barb of oats or a like body.

In the case of an elephant who died at the menagerie in 1817, they found a grain of oats in the center of the calculus. In man it is sometimes the same.

In a case of Sequignol's a splinter of wood had determined the place of formation, of which it was the center, and the question was of a calculus in the duct of Steno.

In Delery's case the man had eaten a trout, and the next day felt a constant, acute pain. Some time after they extracted a hard body—a sort of irregular pill—the center of which was a fish bone.

Here, as in the bladder, the smallest body surrounds itself with saline deposit. These bodies pass along with the liquids which fill the natural cavities of the body, a phenomenon so often observed in the waters of springs rich in

calcareous salts, where the objects placed therein become the nucleus of rapid petrification.

The chemical constitution proves still more their origin. Analysis of some of them has shown from sixty to sixty-five parts of calcareous phosphates, and from twenty-five to thirty parts carbonate of lime; and you know that these salts exist normally in the saliva.

Dr. Hardy ought to send me an exact analysis of a calculus in twenty-four hours.

Pathological Anatomy.—A complete study of the anatomical arrangement which salivary calculi present to our view, is contained in a curious case related by Closmadenc.

A man had died at Bicêtre in the service of Dr. Delasiauve, to whom Closmadenc was then intern.

This man had a tumor under the tongue which had been discovered during life. They raised the tumor, and having opened the salivary canal its whole length, they found encysted in a lateral dilation an oval-shaped calculus weighing forty-five grains. Upon the flattened sides they found two grooves—two canalicula running longitudinally—which had permitted the saliva to flow over the sides of the stone, and, thanks to this disposition, there was no retention of saliva. However, the gland was double its normal size; but behind the pouch which inclosed the calculus the canal was not dilated, but presented a normal caliber, and so to say in passing, this fact was quite sufficient to ruin the theory of Lonis, according to which the ranula was due to an accumulation of liquid in Wharton's duct. The pouch inclosed not one drop of liquid.

That which Closmadenc had found upon the cadaver, I have been able to show you by a real dissection made upon the living. The dilatation in which the calculus was situated inclosed no liquid, there was no salivary concretion, and, in short, we penetrated into this pouch containing the calculus by the natural orifice of the duct.

We thus see what has been said and done upon the subject of calculi in Wharton's duct; but does it exist in the gland itself? This case, which is very rare, has, however, been observed twice, and can not be doubted.

You can, among others, consult a case of Jobert's, who reports an example. Before I recall to you the principal features of this subject, I ought to say to you that these calculi are very often multiple. Sometimes they are placed one after the other in the canal, like beads on a string. In other cases they are agglomerated. Ribes has extracted ten from one canal, Drelincourt seven. Often they are seen two or three together, but never have they shown them to be in the gland. It was Jobert who, in taking out a calculus which had retreated, felt in the body of the sub-maxillary gland one of these concretions, which he extirpated above the hyoïdien region. Since then Dr. Terrier has presented an analogous case to the Surgical Society. Thus calculi may develop themselves in the salivary glands, though they may be less frequent than in the canal of Wharton, where they are usually seated at about three-eighths of an inch from the external orifice.

Finally, in a case without analogy, they have met in the gland a sort of lithiasis, that is to say, multiple concretions analogous to those which were observed in the uric diathesis.

These calculi are generally mammillated and irregular; and I have already said that they, sometimes, have cavities with two lateral trenches, which let the saliva run out. This disposition was supplied in our case by the deep sinuses which allowed the irregularities of the surface to sink in them, and which explains its adherence to the mucous membrane, and the absence of retention of saliva, it finding its way out in consequence of these irregularities.

The parotidean calculi, approach more nearly the spherical form, while those of Wharton's canal are olivary fusiform. Their weight and volume vary. The largest parotidean cal-

culus which had been observed, was extracted by Bassow, of Moscow, and weighed 270 grains; ours weighed 150 grains, and is the largest we have seen. It is one three-eighth inch long, and one five-sixteenth inches in circumference. Its color is greyish yellow; sometimes it is darker.

Dr. Maisonneuve has seen one of a red brick color. This calculus has become cracked, and, as you can see shows a pretty regular stratification. The concentric layers, of which it is composed, are formed one upon the other from a nucleus, at the side of which a point harder appears to be the origin of the formation.

As you see, it has no foreign body in the center; but permit me to found upon this point, an hypothesis, probable on some considerations. Dr. Maude, observed, a long time since, that the chemical composition of the tartar which encrusts the teeth was identical with that of salivary calculi.

Is there not here an indication which will allow us to believe that a fragment of this tartar accidentally introduced into the duct of Wharton, might give birth to the formation of a salivary calculus? And in support of this idea, I ask you to observe that these calculi are found oftenest in those who care little about the cleanliness of their teeth. and I will add that these calculi, are more frequent in the canal of Wharton so much nearer to the dental vault than the canal of Steno.

This narrative, gentlemen, would serve for a point of departure, in a research which might not be without interest.

I add, in terminating the pathologico-anatomical discussion, that a little fragment of this calculus was sent to Dr. Hardy, chief of the chemical laboratory, and contrary to our anticipation, and contrary to the fact most generally observed, the analysis showed that it was composed exclusively of carbonate of lime. This fact will be ultimately cleared up.

Symptomatology.—The example which you have under con-

sideration, gentlemen, shows you that the patients themselves often perceive the presence of these calculi only when they have attained considerable size.

Our patient, in fact, discovered in 1870 a tumor, the size of an olive, and the same fact appears in most cases. This is because the accretion is slow, and it is some time before it becomes a cause of appreciable trouble. These are felt in the region of the tongue, or of the salivary gland.

It is particularly these last phenomena which attract the attention of the patients. They have been described by Dr. Dujardin, who was afflicted himself with a salivary calculus.

Most of the patients feel a pain in eating, at the angle of the jaw, and this is because mastication stimulates abundant afflux of saliva, and the excretion being restrained, accumulates, distends the gland and its ducts, and provokes a lively sensibility. Sometimes the patients relieve themselves by pressing on the sub-maxillary region, and so, evacuating the liquid by a jet, are relieved.

This occlusion and pain, in some cases, are reproduced at all meals; in others they appear irregularly. Meanwhile, under the influence of this repeated distension, the sub-maxillary gland becomes tumefied, congested, and the region becomes hot and somewhat inflamed. They consult a physician who recognizes the sub-maxillary inflammation, for which the patient has no difficulty in finding some common place cause.

Some therapeutical means are directed against the secondary symptom, of which we overlook the cause. Suspect, gentlemen, salivary calculi when you find a painful engorgement of the sub-maxillary gland.

Dr. Hirard, of this hospital, recounted to me a case of one of his nieces, who was attacked after a meal. It was a calculus. A classical case of Dr. Roberts's shows that a hog's bristle, accidentally introduced into Wharton's duct by a

shoemaker, became the source of inflammatory accidents in the gland, the cause being for sometime unknown.

Finally, my colleague, Dr. Maissenet, attended a young novice at the Hotel Dieu Nunnery, who had a swelling at the sub-maxillary region. He believed it to be a scrofulous engorgement of the ganglions. The next morning the patient told him she had spit out a tooth; but it was a salivary calculus, which had been spontaneously expelled.

When these symptoms have continued for a considerable time, they sometimes are followed by a real inflammation. An abscess forms and opens spontaneously; oftenest under the tongue; sometimes in the sub-maxillary region; and the orifice of the canal is converted into a permanent fistulous opening, by the presence of the foreign body. But sometimes we see the canal a long time dilating itself; it then appearing whitish and hard, sonorous to the touch of the probe, and finally, all at once, the walls of the canal sufficiently distended, open themselves and let the calculus fall out; for this whitish body was a calculus, spontaneous delivery. Such is the progress and termination, in some sort normal of the evolution of salivary calculi, as it has been described by a physician whom I cited to you as having experienced a cure in his own person. Sometimes when fistulas are produced they serve for a passage by which the calculus is expelled, but these cases are rare. But oftenest the fistulous tract conducts the probe to a body which is hard and sonorous; this is the calculus. The diagnosis is made; but if left "in situ" it almost invariably remains fixed, being held by the adherence of the mucous membrane, and the arrangement of the orifice is not favorable to spontaneous expression.

Finally, in certain cases, as we have seen, the calculus permits the flow of saliva; if there have been accidents in the region of the gland they become harmless, and it is solely by its volume, which interferes with mastication and the

production of sound, that the concretion attracts the attention of the patient.

Diagnosis.—Absolute diagnosis in these cases is, nevertheless, not always easy, I have said to you that inflammatory phenomena in the region of the gland, and which ought to be our guide, sometimes are due to other causes. Moreover, the proof of the presence of a calculus may present serious difficulties.

In a case, of which Dr. Hervetz, of Chégoin, has given me the history, to an enormous swelling of the neck was joined such a constriction of the jaws that the patient could open them only a few lines. In such circumstances only an approximate diagnosis can be made, and the doctor can only be guided by such antecedent history as would allow a presumption of the existence of an obstacle to the flow of saliva. When, on the contrary, the patient can open the mouth, and a rational examination of the functional troubles causes us to suppose the presence of a salivary calculus, we have only to put our finger on the tongue to feel a tumor absolutely hard, at the floor of the mouth. To be more sure, we have only to probe the canal, which act, however delicate it may be, is always possible provided that we examine the patient as you have seen me do, in a sufficient light, opposite a window, for example, and that we employ a very small probe, say one of Bowman's probes, or such as belong to Annel's syringe.

At from five-eighths inch to one and one-eighth inches the stony feel of the calculus will confirm the diagnosis. If probing is impossible, which ought to be rare, but which it is necessary to foresee, we can accomplish the same end by running a needle perpendicularly through the tumor, as you have seen me do, the needle finding the calculus almost as quickly as the probe, and this practice is without inconvenience.

The differential diagnosis is more difficult. We must in-

deed distinguish the salivary calculus, first, from those acute and chronic swellings of the submaxillary gland which are the product of other causes; second, from those cysts which form in the neighborhood of Wharton's duct, and are called ranulas; third, from various tumors which we find on the floor of the mouth, from real stones under the tongue, and from teeth which have deviated or made error of way, of which the case of Stansky has shown us an example.

In the first place, doctors of large experience have been deceived by a swelling of the submaxillary gland. Thus, in 1852, at the Biological Society, Rayer reported the history of a doctor (the second one so far as we know who has had a salivary calculus, but whose initials only are given) who had for several years treated himself for a periodical swelling of this gland, without doubting its character.

Rayer, on examination, believed he saw something whitish across the dilated canal of Wharton, and which proved to be a salivary calculus. It was expelled spontaneously.

Jobert, in an analagous case hesitated. His patient was taken in 1850 with very grave symptoms, of which he could not determine the cause, when the expulsion of a salivary calculus caused the symptoms to cease. The patient returned in 1852 with a noticeable swelling of the gland. Jobert suspected the existence of a new calculus, but as the probe discovered none, and the symptoms persisted, he undertook the extirpation of the submaxillary gland. But during the operation he perceived the existence of a calculus, deeply seated in the tissues of the gland. Notwithstanding a hemorrhage which took place during the following night, the patient recovered, but in 1857 he returned again with a third attack. This time the calculus was situated in the deepest part of Wharton's canal.

Recently, besides, Dr. Duplay saw a case analogous. A patient came first to him in 1869, with grave symptoms in the region of the gland, caused by a calculus under the

tongue, and which he extracted; but in 1874 the same patient returned, with a noticeable swelling of the gland, but without any appreciable tumor in the floor of the mouth. An incision of the engorged gland permitted the escape of a new calculus, which was the cause of these symptoms. And notice carefully, gentlemen, that in these cases there is no question of calculi inadvertently left in situ at the first operation. Each time the tract had been carefully explored and found free. There is then something like a lithic diathesis, due to that dental tartar which appears to me to be the point of development of secondary salivary calculi. In fact, after the first operation the pocket where the calculus rested remains for a long time open, and accessible to foreign bodies in the mouth, we comprehend that the debris of this tartar can introduce itself in that way into the salivary ducts.

Finally, gentlemen, Dr. Terrier presented, some months since, to the Surgical Society a calculus found in this gland, and which he had extirpated. Although a calculus or a fragment of a calculus had been extracted by the mouth some months before, still the enormous swelling of the gland, as in the cases of Jobert and of Duplay, had imposed itself upon the mind as a degeneration of this organ. The other half of this calculus, as I have told you, was found after the extirpation of the gland. The patient recovered.

You ought therefore to comprehend that the diagnosis of certain calculi, complicated with symptomatic or idiopathic inflammation of the sub-maxillary gland, may sometimes be surrounded with great obscurity. Dr. Chassaingnac, for instance, had diagnosticated an inflammation of the sub-maxillary gland; a few days afterwards a slip of straw was expelled from Wharton's duct. The case you will find reported at length in the bulletins of the Surgical Society. I also recall to you the fact that a hog's bristle had caused the

symptoms, of which the nature was unknown, in the patient of Robert.

Sometimes, also, inflammation may set up in the gland without there being any foreign body in the canal, examples of which we find in the thesis of Mr. Crouzet (1874).

Guided by these histories and by the remittent form of the symptoms, the surgeon will try to feel the calculus by direct probing through the canal or indirectly by the pin; but if these means can not be employed, or give a negative result, we had better rest in doubt than to make an erroneous diagnosis.

Thus may be explained the many cases of unrecognized calculi that we meet in science.

Secondly, the symptoms which accompany salivary calculi may confound this affection with ranula. This statement demands some explanation. What is a *grenouillete* (ranula)? Laying aside the ancient prejudices which saw in this sort of tumor only one variety of serous cysts under the tongue, Lonis, in the eighteenth century, professed that the ranula was due to the accumulation of saliva in Wharton's canal. This opinion, which was afterwards rejected, and the doctrine admitted that the ranula was developed at the expense of the sub-maxillary gland, was founded only upon rare cases. Thus, Jarjavay observed a case seemingly like this, and of which M. Forget made an interesting report to the Surgical Society. I have, myself, seen an authentic case of a salivary ranula in the dilated canal of Wharton, and you will find it published in the same report, but still, at one time, it was only a question of exceptions.

The question being clearly between sublingual cysts, independent of Wharton's duct, that is to say, ranulas, properly speaking, and salivary calculus is soon resolved. In general the calculus forms a hard tumor; the saliva does not accumulate behind it. Nevertheless the fact has been observed by Dr. Duprés at the Hospital Cochin, and he published the case

in September, 1872, in the *Gazette des Hopitaux*. But in these isolated cases themselves, you understand, the probe cuts the question short by discovering the calculus, if it exists, by contact of the sound, or by showing that the canal is free from any tumor if it is a ranula.

But you know that for a long time we have considered stones under the tongue as petrified ranulas. What truth is there in this supposition? Are there well-proved petrifications of sub-lingual cysts? We may suppose it by analogy, although we are in want of well-observed cases of the kind. It is certain that we have seen calcifications of serous cysts, and here is an example: A few days since I brought Mr. Dussaussey, my intern, to assist me to extirpate a cyst in the mastoidean region in a young and very handsome woman. After having made the incision in the skin, posterior to the tumor, so as to leave the cicatrice as little apparent as possible, my bistoury encountered a hard body which notched the blade. Through this incision I then expelled stony concretions, which were composed of phosphate of lime. I here had to do with the calcification of a sero-sanguineous cyst.

It would be the same with a true ranula, subjected to the same modification. When I filled the place of Professor Croquet, at the Clinical Hospital, a patient came to be relieved of a very hard sub-lingual cyst which prevented his speech. I incised the mucous membrane over the tumor, intending to perform Jobert's operation of again bringing together the lips of the wound, when we were astonished to see a round, hard body jump from the wound and rebound upon the table. Astonished at first by an incident so unlooked for, and by the repeated and strange boundings which this foreign body made, and which had enucleated itself so abruptly, I seized it, and was able to prove it to be a hydated cyst, invaded at several points by calcification, and that the instantaneous contraction of the sub-hyoidean muscles

had ejected the body as soon as the incision was made. Dr. Robin, who made a careful examination of the calculus, confirmed my opinion, finding in its center the characteristic laminæ. It must, therefore, be admitted that certain cysts in the floor of the mouth may become incrustated with calcareous salts; and perhaps the ranula may itself suffer this transformation, though we are not in possession of any examples—at least, we are not willing to count as such three cases of petrified ranulas which have been transmitted to us by the surgeons of the sixteenth century, who were not well instructed, and who were not aware of the difficulties of the question.

Third. Can the salivary calculi be confounded with the other tumors in the floor of the mouth?

I recall to you here, gentlemen, the interesting case of Stansky. This physician was consulted by a young girl who, without having felt any pain, or remarked any symptoms in the region of the submaxillary gland, had noticed the development of a hard tumor under the tongue. Wharton's canal was not probed, but by an incision Stansky discovered a hard tumor, situated between the jaw and the canal, and which contained two teeth. The case was interesting, but the doctor who had observed it was wrong in the deduction that all salivary calculi had for cause an abnormal development of teeth. It was a grave error.

In the case of Stansky, it was not a question of calculus, but of an anomaly; of a deviation of a dental follicle; in a word, of dentition in an isolated place. The diagnosis should not be obscured by analogous facts, because it is a rule to be generally observed that we ought not to allow ourselves to be stopped by these isolated cases, these curious and rare anomalies, when there is doubt; and besides, do you not see that the probe will quickly indicate the nature of the affection, and that Stansky would not have made a barren hypothesis, if we had used it.

Prognosis.—I have but little to say to you upon the prognosis of salivary calculi. In general, it is the prognosis of an annoying affection, but benign and amenable to treatment easily made. Nevertheless, we see from time to time more serious symptoms, and which menace danger.

Dr. Hervez, of Chégoin, sometimes feared for the life of his patient; Jobert also manifested the same alarm in his case. Finally, in the case of parotid calculus observed by Fardeun, of Saumur, the inflammatory swelling of the cheek necessitated repeated, deep incisions, which arrested the progress of the symptoms.

Treatment.—Salivary calculi are surrounded, as we have seen, by accidents more or less grave, and which may demand special treatment. When, then, the calculus, by its presence, has caused sub-maxillary swelling and constriction of the jaws, what must we do? You must follow my plan in a case reported by Dr. Forget in his report of Jobert's case. A young man, of twenty-seven or twenty-eight years, had had a very noticeable sub-maxillary tumor for some days. He was anxious, and had extreme dyspnœa. The question of tracheotomy was discussed, so imminent seemed the danger, but I decided to incise the tumor freely under the jaw, when there run out an ill-colored liquid; and when I had enlarged the incision with a fluted sound, a remarkable quantity of viscid saliva escaped also. I had opened the gland where the saliva had accumulated, because of a constriction of Wharton's duct, consecutive to a chancre.

This patient died some years afterwards of syphilitic meningitis, for which he was treated by Doctors Bouilland and Ricord.

Thus all the therapeutical indications are to prevent suffocation by incisions deep enough to reach the gland itself.

As for the rest of the treatment, after having already discussed the question of the therapeutics in the case of our patient, and given my reasons for preferring to extirpate by

a direct incision of the mucous membrane over the tumor, I need not add more. You must know, however, that the calculus sometimes steals away, so to speak, and appears to disappear in the depths of the sac, where it is difficult to seize it. In an analogous case Dr. Maisonneuve overcame this difficulty easily by passing a silver thread behind the calculus, and so drawing it out. Sometimes, on the contrary, the calculus is in a manner bound in by a sort of hour-glass constriction, and it is then necessary to gently rock it with the fluted sound, pushed under it. Finally, if there are fistulas, we may use them for getting at the calculus, and withdrawing it after having loosened it in its place.

After these operations the patients recover.

Is there a salivary fistula? It matters little to them, but to satisfy a legitimate curiosity we shall endeavor to elucidate this unknown point by an attentive and prolonged observation of our work. It remains yet subject to relapses of which science offers several examples, and these relapses may, perhaps, be evaded by a very simple prophylactic treatment. In this study I have arrived at the hypothesis that the production of salivary calculi is not without relation to the deposit of tartar upon the teeth of persons who are habitually careless of their person, and it is perhaps in the hygiene of the mouth that we are to find the means of preventing either the formation or the "morbus recidivus" of salivary calculi.

[Since the publication of the foregoing clinique, Dr. Sirius Pirondi, Professor in the School of Medicine at Marseilles, has sent an answer to the question of Professor Richet, "What is the result of the wound in the operation of incising the mucous membrane for the extirpation of salivary calculi?" and which is here appended.—TRANSLATOR.]

In his letter to Professor Richet he says: "Circumstances having favored me twice in this relation, I felt that I ought to give them to you."

CASE I.—"In 1869 a man, aged thirty-six, came to the

'Hotel Dieu' to consult our lamented colleague, Dr. Broquier. He said an abscess had burst spontaneously in his mouth at the left lower jaw, about three weeks before, and since then incessant running of purulent saliva, impediment in speaking, and particularly in mastication, swelling, etc. Broquier's diagnosis was salivary calculus. He enlarged the opening and took out, without very much difficulty, a stone the size of an almond. The orifice of Wharton's duct was intact, and communicated with the bed of the calculus. After some days the wound was completely cicatrized, the canal remained permeable, and the place, which I saw often afterwards, showed no signs either of the operation or of the accident which had caused it."

CASE II.—"In 1871 I was called to see a sea captain afflicted with a salivary calculus. Finding the mucous membrane perfectly glued to the calculus, and the orifice of the canal intact, although slightly dilated, I was not willing to touch the orifice, but cut directly upon the calculus (antero-posterior diameter), and using a small, inflexible spatula, I easily enucleated a stone of great size, weighing a little over one hundred and twenty grains, oblong, one and a half inches in length, and a circumference in the middle of seven-eighths of an inch. It presented on its sloping surface a canaliculus deep and covered, and nearly a quarter of an inch long. The wound cicatrized promptly, and without other care than frequent washings. It has left no trace, and in the frequent voyages of this captain to Marsailles, I have easily satisfied myself that the functions of this part of his mouth *are intact*. Here, then, are two examples of salivary calculus without abnormal consequences—such, for example, as obliteration of Wharton's canal—and without return of the calculus."

[The editor of *La France Medicale* adds to this that Professor Richet had, on the 20th January (1876), reported to him that the patient operated on by him (the Professor) in December, had a large fistula at the place of incision not yet healed.—THE TRANSLATOR.]

CORRESPONDENCE.

VIENNA LETTER.

VIENNA, December, 1876.

DEAR DOCTOR: The medical world of Vienna have their internal strifes and commotions, as well as their less illustrious brethren in the lesser spheres of this mundane orb. Even now the clashing of arms and the voices of the dusky warriors are heard from afar, and discord is reigning supreme. The war-cry has gone forth, and "victory or death" seems to be the watchword. The cause of all this "racket" is the Polyclinic. This institution is a free dispensary, with very large patronage, and numbers among its large staff several university professors and privat-docenten. It is mainly supported by the municipality of Vienna. Many university students attend instructions at this place. It has now been discovered by some physicians that this institution is run only for the purpose of self-aggrandizement by the leaders of the concern, that it is a means of spreading contagious diseases, and so on. It is also claimed to be detrimental to the general interests of the profession, many patients going there who are able to pay for medical advice, and that it is entirely useless, as all physicians here are perfectly willing to prescribe for the poor gratis. The very name even is assailed. The opposers say that "polyclinic" can be applied only to an institution containing beds, and as this one can not boast them, it should be called a street ambulance. They of the Polyclinic have requested an investigation from the board of health as regards its spreading contagious diseases, and hold forth its great popularity among the poor, and the large number of students attending for purposes of instruction, as a proof of its necessity. Much printer's ink has

already been spilt in the battle, and it is not yet closed; but the above are the main arguments pro and con. To an impartial observer the Polyclinicans, as they are termed, seem to be conducting the battle the more honorably, whereas, the opponents, using every means possible, seem to be actuated rather by motives of jealousy than those of benefiting any body but themselves. The opponents have been successful in so far that the city council have cut off financial aid, but this will not cause the death of the Polyclinic, it being proposed to raise a sufficient sum for its maintenance among charitable citizens.

A very pleasing little incident occurred at Pesth a few days ago, and one must wish that it would only find frequent repetition in our own country. A certain Mathè, having prefixed the title *Doctor* to his name in advertising, was summoned before the court to show by what right he styled himself doctor. He appeared and showed a certificate from the well-known firm, Buchanan & Co., Philadelphia, which not only made him a doctor of medicine, chemistry, and philosophy, but also stated that he had delivered one or more courses of lectures at their institution. In view of the fact that no such institution existed, and that the delinquent had never been away from Europe, the judge not only fined him, but also reserved the diploma, probably as a relic of what customs could exist in America in the year of our Lord 1876.

Medical journals are not so abundant here as in the States—in fact no kind of journalism flourishes here as in the land of newspapers—but what is lost in numbers here is made up in quality.

I must apologize for not having given a description of the medical notables, as per promise, as these matters led me off. I will make up at some other time.

Respectfully,

DR. A. M. B.

EDITORIAL.

We were very much interested in some remarks that appeared a short time ago in the Medical Record on the endowment of medical schools. If this is a thing to be desired in New York and Philadelphia, much more is it in other parts of the country. Every where our medical colleges, multiplied beyond necessity, without government patronage or private munificence, are compelled more or less in the struggle for existence to debase still farther instead of elevating the standard of medical education. And, astonishing as is the fact, the public, who are vitally interested in this matter, seem totally indifferent to a state of things which touches them very nearly in their own persons and that of their friends. Perhaps many reasons might be assigned for this indifference, and one of these, no doubt, is our reticence as a profession, and our somewhat exaggerated notions of etiquette. If any other profession wants the public to know any thing about its work or its needs it resorts to the daily press, and why should not we? We occupy a position as honorable as any, yea, if we spoke the very thoughts of our heart, we should say more honorable than any. Our daily business is among the people, with whom our relations are of the closest and most important kind. The public can not do without us, and we have been trying too long to do without them, in some respects. Medical education at forty or fifty dollars a term, unless the classes be very large, which is more or less of a disadvantage, does not afford means for the appliances of teaching, or the remuneration of teachers, which, if not absolutely necessary, is highly desirable. Now, if Princeton, or Yale, or Harvard, want money for educational purposes they appeal to the public, and, to the honor of our people be it said, they never appeal in vain. Why should not the medical colleges do the same? What is there to be ashamed of, if we are honestly and earnestly engaged in fitting men for this most arduous as well as noblest of callings? We are doing more for the public than they can ever do for us. The burden of obligation is all on their side, and their attention should be drawn to the fact that neither in their individual nor corporate capacity has the medical body ever been properly appreciated or rewarded, as a rule at least.

We have no objection to seeing our rich patients found scholarships in literary colleges, endow libraries or professorships in the same, build churches, or subscribe to museums and art galleries. For all these things we have the highest appreciation. But why do such acts of munificence so seldom gladden our medical colleges? Is it because out of our absurd

reticence, we keep silence, and our wants remain unknown? If so, let it be so no longer. Let us say to the rich man, who, perhaps, only needs a hint to lead him to act, we ask you by the pains it has relieved or averted, by the dear lives it has saved, by the strongest and most binding ties of obligation, to turn your wealth into a perpetual blessing by conferring some of it on our profession. Perhaps we can hardly hope that, as a whole, many of our medical colleges will be endowed, but some of the chairs certainly ought to be.

For the sake of perspicuity, we may divide the professorships in a medical college into two classes, practical and strictly scientific.

The incumbents of the practical chairs, such as Practice of Medicine, Surgery, Obstetrics, etc., find an indirect remuneration in the added reputation and practice which their position brings, and their daily employment constantly trains and fits them for teaching. But with some of the professorships it is rather different. Their possession does not, in the estimation of the public, specially indorse the medical ability of the incumbent. For their proper cultivation much time, special apparatus, etc., is needed, and practice is rather a hindrance than a help to their prosecution. These remarks apply more or less to such chairs as Physiology and Pathology, which ought to be endowed in every medical college, especially in the smaller ones, so that young men of ability and ambition may seek them. And if provided with the proper appliances, and affording a sufficient income, such professorships in our small colleges are favorable for systematic, life-long study, and from them we might hope to receive constant returns of valuable knowledge. It has been so in Europe; it would be so here. We need endowments for our medical colleges, for professorships, museums, libraries, laboratories, etc. Let us, publicly and privately, make this want known; for one thing seems clear, we must ask if we would receive.

REVIEWS.

The Practitioner's Handbook of Treatment; or, Principles of Therapeutics. By J. MILNER FOTHERGILL, M.D. Philadelphia: Henry C. Lea. 1877.

This is a good book, but it might be a good deal better. Its plan is original, being, to bring physiology, pathology, and therapeutics in direct relation to the various forms of disease, and point out, not special medicines, but the general principles of treatment applicable to each. In following out this plan the author has presented us with a very interest-

ing book, but it would be a great deal better if it were more condensed, for there is an endless repetition of all sorts of things, especially the iteration and magnifying of a few commonplace physiological comparisons, which gets to be very tedious at last. Part of this repetition is no doubt the inevitable result of the peculiar plan of the work, but part also of carelessness in its composition, a carelessness which extends to certain crudities and inelegancies of style obvious throughout. To illustrate our meaning, let us give a few examples. For instance, on page 534 we read: "But at the same time they must take the potential consequences." Now this high-sounding phrase means they must take the consequences, which is logical and sensible enough, while the addition of the useless word "potential" comes very near to making nonsense of it. On page 539 we have (*italics ours*): "If, however, beef-tea be given with sago, or perhaps even better still, with arrowroot, which *goes thin* on boiling, and so *drinks clean*," etc. This introduction of the cook's technology is as unnecessary as inelegant, and has nothing at all to recommend it, being, indeed, simply a form of slang. On page 545 we find this short sentence: "In atonic gout it also is useful," when plainly enough the author meant "In atonic gout it is also useful"—an entirely different statement. On page 557 we are told that "For the young man to whom such experience is impossible, its advantages can only be *supposed* by painstaking observation," etc. Why not say compensated for, which is good English, while supposed is not, and suggests unpleasant associations to the medical mind. But enough. We could fill a page with just such examples, and we are very sorry for it, because the book is really too good to be so marred. We notice, also, more typographical errors than we ever remember to have seen before in one of Henry C. Lea's books. We hope soon to see a new edition of this book, "much improved," but not enlarged.

The Tonic Treatment of Syphilis. By E. L. Keyes, A.M., M.D. New York: Appleton & Co. 1877.

This little study of Dr. Keyes is a very valuable and suggestive addition to our current medical literature. Mercury is the *tonic* our author recommends for syphilis, and he undertakes the proof of its being a tonic, in small doses, by proving that it increases the number of red corpuscles in the blood. This is a very satisfactory thing to know, but a captious critic would be tempted to find fault with the logic of the conclusions. Is all that we mean by tonic included in the fact of a medicine increasing the number of the red corpuscles? And whatever its tonic properties may be, are we sure that it is by virtue of them alone that mercury does good in syphilis?

Dr. Keyes is of a warm and gushing temperament. Witness the following: "No means in the physician's hands place him so near the Deity as the iodide of potassium. With it, in well-selected syphilitic cases, he can sometimes almost effect a resurrection," etc.

This is very fine! What becomes of Cicero's often-quoted passage on the godlike attributes of the physician, compared with this, which unites all the grandeur of the old Roman with the scientific precision of modern time. But for all the liberties we have taken with his style, we like Dr. Keyes' book, and thank him for having written it, and recommend every physician—especially every young physician—to buy and read it.

An Elementary Treatise on Diseases of the Skin, for the use of Students and Practitioners. By Henry G. Piffard, A.M., M.D. London and New York: McMillan & Co. 1876.

This is a beautiful book in paper, print, and illustration, and a credit to American medical authorship. The introductory chapters are exceptionally full and good, and we are therefore sorry to notice a few such crudities as the following, in describing the sebaceous glands, on page 15:

"These glands are as universally, but not so numerous, distributed as *the ones* just described."

Pray, why not have said "as those just described?" What in the world are relative pronouns good for if dermatologists may not use them as well as other people?

Dr. Piffard is a most thorough-going humoralist, and is as diathetical as heart can wish. This is well enough, but it has struck us that he is too sure about some things. Oh, that we could have some of this *assurance* of faith! But, whatever we may think of his views, or however we may envy his faith in them, we envy still more his power and skill in setting them forth and defending them. The book is a strong one, and will make a fine reputation for its author.

Myelitis of the Anterior Horns, or Spinal Paralysis of the Adult and Child. By E. C. Seguin, M.D. New York: G. P. Putnam's Sons. 1877.

This is a most capital little book. It is not too much to say that it is a model of what a medical monograph ought to be. All that is valuable in the literature of the subject is referred to, a resume of all the important cases given, and several most thoroughly-observed examples of his own added by the author. No pretense of knowing more than is known, a just estimate of the labors of others, and a strict adherence to scientific methods mark the work throughout. The style is clear, precise, and elegant, fit vehicle for scientific thought. It is sincerely to be hoped that the accomplished author will give us other monographs on special nervous disorders; no one is better fitted for the task, and he will both benefit the profession and raise his own reputation by so doing.

REPORTS OF SOCIETIES.

OPHTHALMOLOGICAL CONGRESS.

REPORT OF THE FIFTH INTERNATIONAL OPHTHALMOLOGICAL CONGRESS.
Held in New York September, 1876. New York: D. Appleton & Co.,
pp. 265.

Although this Congress is styled International, only four out of twenty-seven papers published in the report are contributed by foreign delegates. It was a source of regret to all who attended the meeting that the delegation of members from abroad were so few, but the American representatives did every thing in their power to make the occasion, as it was, a great success. The volume before us was published by a committee composed of Drs. Hermann Knapp, Henry D. Noyes, Charles Bull, and Richard H. Derby. That their work has been well done is evinced by the result. It will not be possible in a brief review like this, to do more than to refer to a few of the more interesting papers. Dr. Noyes read the first paper, in which he described a method of operating for blepharoplasty, by taking the flaps from the nose and cheek. The incisions must be made so as to include in the pedicle of the flap all the vascular twigs which come from the orbit on the side where the deformity exists, as well, also, as some branches from the other side of the median line. The indications for this method are: 1. The repair of lesions about inner halves of the lid. 2. The supply of material where there is no skin available for flesh either upon the forehead or temple or outer part of cheek. Two cases in which the operation was made to meet the second indication, were shown to the Congress. The success obtained in both, which is also shown by diagrams in the publication, is very good.

A very interesting paper on Coloboma Lentis, is by Albert G. Heyl, of Philadelphia. He gives three cases of the kind, observed personally, and offers some very interesting remarks on the literature of the subject, in which he deals mainly with the process of development of the lens in the embryo. Dr. Alt, of New York, contributes a valuable paper on Sympathetic Neuro-retinitis. He collects four cases from literature, two by the late Prof. Von Graefe, and two by T. R. Pooley, of New York, and adds three new cases observed by Drs. H. Knapp and Greuning. The number of reported cases, he thinks, too small for statistical conclusions, but offers the following remarks connected with them as of interest. In six of the seven cases the neuro-retinitis was combined with irido-choroiditis. In one only it ran its course without any complication (*i. e.* the second case reported by Knapp). In five of the cases the patients entirely recovered, with the exception of one, whose final vision was 5-200. Two were totally lost. In four cases the enucleation of the first affected eye had been performed. The time between the affection of the eye first diseased and the appearance of sympathetic neuro-retinitis was, severally, forty years, thirty-five years, twenty years, and twelve years, two months and a half, and five weeks. Of the seven eyes which caused the sympathetic affection, four were lost by disease without any injury, whereas in the remaining three an injury was the primary cause of the trouble. Alt comments on the fact that sympathetic neuro-retinitis was more frequently induced by a non-traumatic cause than the other forms of sympathetic ophthalmia. According to statistics which he had recently made of one hundred cases, eighty resulted from an injury to the first eye. In the discussion following this paper, the President, Dr. E. Williams, of Cincinnati, said that in two cases in which he had examined the eyes, re-

moved on account of the presence of a foreign body, he found in addition to inflammation of the ciliary region and vitreous, a most marked neuro-retinitis.

In these cases it was, of course, impossible to diagnose its condition before enucleation, but he was led to believe that, in most cases, or, at least, in many cases, of a foreign body in the eye, with severe resulting inflammation, and subsequent danger to the eye, there is an early neuro-retinitis. In reply to a question as to the mode of production of this form of sympathetic disease, Dr. Alt said that he had come to the conclusion that we have no right to say that the ciliary nerves are the sole cause of sympathetic trouble; that they *only* produce the sympathetic ophthalmia in the other eye; but that the optic nerve is in many instances also diseased, and by this disease, mechanically, sympathetic ophthalmia is produced in the other eye; and he deduces from the fact that, whereas, in four of those eyes which he examined he found disease of the optic nerve and retina, therefore the disease of the nerve in the other eye depended upon it. This is going back to the old theory of the mode of transmission of sympathetic trouble. We agree with Noyes that this is, as yet, beyond our stand-point in pathological anatomy. Nor does it seem to us that the single observation advanced, in which there was neuro-retinitis without any other form of inflammation, can be so confidently pronounced upon as favoring such an assumption. With Noyes we agree that it will take vigorous demonstration to make us as confident of that chain of communication as we are now confident that the chain follows along the track of the ciliary nerve.

Dr. H. Knapp presented a paper on Orbital Tumors, in which he considered some of the more important types of these tumors, illustrating the subject by cases of which either the patient or specimens were shown. His remarks included—1. *Orbital Exostosis*; 2. *Retention Tumors of the Neighboring Cavities*; 3. *Sarcoma and Chondroma of the Orbital Wall*; and, 4. *Growths in the Neighboring Cavities of the Eye*. The remarks under each of these heads are eminently practical, and the illustrative cases most instructive. We commend this communication to the careful reading of the general surgeon, as well as to the specialist.

Dr. Mathewson, of Brooklyn, reports a case of choked disk, which is remarkable, for the length of time in which it remained without change in appearance or progressive impairment of vision. Prof. Nagel, of Tübingen, sent a communication on *The Introduction of the Meter-Measure for the Determination of the Lenses*. Mr. Carter thought the Congress already fully committed to the view taken by Dr. Nagel in this matter, in favor of introducing the metric system, by their action at the meeting in London in 1872, in which a declaration was signed pledging the members present to use the metric system. While on this subject, we may mention that both Drs. Loring and Knapp presented Ophthalmoscopes with metric system of notation of the lenses. Dr. Loring again discussed the question of *The Halo Round the Macula Lutea*, mainly for the purpose of reply to the objections to his theory advanced in 1871 by Dr. Brecht, and to assert his belief in the truth of the opinions advanced at that time, that the halo round the macula lutea, seen with the inverted image, is the product of reflection and refraction from the combination of curved surfaces which enter into the construction of this portion of the retina. Drs. Noyes and Agnew both contributed analyses of a large number of Asthenopes; the former of 1,079, the latter 1,060.

We have only done partial justice to the review of this handsome volume, which will compare very favorably with the publication of the Report of the Fourth Congress held in London in 1872. In conclusion, we would say that the success of the meeting was due in no small degree to the wisdom and tact displayed by the President, Dr. E. Williams, of Cincinnati, and to the efforts of the Committee on Arrangements.

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ORIGINAL COMMUNICATIONS.

ART. I.—*On the use of the Obstetrical Forceps.* By SAMUEL D. TURNER, M.D., of Circleville, Ohio, Professor of Diseases of Women and Children, in Starling Medical College. Read before the Central Ohio Medical Association, and published by the request of the Association.

This society has imposed upon me the honorable task of opening the discussion upon the use of the Obstetrical Forceps. It does not expect of me, as I understand it, an exhaustive essay, but rather a sketchy outline, to be filled in by the experience and reflections of its various members. In this view I undertake the task.

The invention of the obstetrical forceps is a matter of just pride to the medical profession. No one invention has saved so many hours of anguish or so many lives as this. It is a triumph which has shed its glory on us all, and has given increased dignity and repute to the name of Doctor. We are justly proud that through the genius of one of us we are no longer idle, but anxious spectators of the agonizing struggles of the parturient woman, but that we can, by means of these instruments, terminate, in safety, almost at will, her pains and dangers.

But if we are justly proud of the forceps, in the history of this invention there is, also, for us a lesson in humility. For over two thousand years all the learning and sagacity of a very erudite profession—for the doctors of that day were men of learning—men who talked, and wrote, and spun unsubstantial theories in Latin and Greek—men who signed themselves “Masters of Arts”—sought a method of delivering the mother and saving the child; fully realized the value

of traction in assisting the expulsive efforts of the woman ; saw the inestimable advantages of the forceps once applied, and yet strangely and stupidly overlooked as simple an idea as the separate introduction of the disjointed blades. There is humiliation in the thought that during all these long years, while mother and child died—from Hippocrates to its realization by that unpretentious country doctor, Paul Chamberlen—all this erudition and genius, blindly groping, stumbled over the simplest solution of this very simple mechanical problem.

Much reproach has been heaped upon Paul Chamberlen that he sought to make a market of his discovery. This censure is partly just; but may there not be some palliation of his fault? It is not every saint that is made of the stuff which makes martyrs, nor does every good man attain that pitch of moral grandeur which enables him to sacrifice present gain and earthly good for the doubtful recompense of a doubtful posthumous fame. Paul Chamberlen—a plain man, probably not fully aware of the enduring greatness of the results of his labors; a man of great inventive genius, but not erudite in his profession; without eloquence or the prestige of a great name—may have been distrustful of his ability to defend the merits of his invention or his rights to its discovery against the trained volubility and superior pretensions of the city practitioner. Who knows, had Chamberlen broadly published his secret, but that these courtly and learned gentlemen would have sneered at the clumsy pot-hooks of this obscure country practitioner, crushed him with supercilious patronage, or with glib-tongued audacity robbed him of all his merit, and coolly appropriated to themselves all his glory. Such things have been done in the recent past, and the world was not much better in the days of Paul Chamberlen. Could he have looked into the future, he might well have distrusted posthumous justice or fame. Of the thousands of women whose lives have been saved

through his genius, scarcely one has heard of Paul Chamberlen. In that great English work, which pretends to hand down to posterity the memory of all remarkable men, no word is said of this great benefactor, while that worthless and dissolute favorite of Charles II., Charles De Villiers, Duke of Buckingham, rests with England's illustrious dead, in a tomb in Westminster Abbey, and receives a page of immortality in the *Encyclopedia Britannica*.

There are two kinds of forceps, the short or single-curved of Chamberlen, and the long or double-curved of Smellie or Levret. It is unnecessary to discuss before you the relative merits of those two instruments. It is generally conceded that the long forceps can do all that can be done with the short forceps, and can do much that the latter can not do. All American practitioners realize the superiority of, and make almost exclusive use of, the Smellie forceps.

There have been many modifications of these since the days of Smellie, slight alterations in the articulations, in the length or material of the handles, and in the curvature and width of the blades. Indeed, no professor of obstetrics or diseases of women seems happy until he has given his name to three instruments—a speculum, a pessary, and a pair of obstetrical forceps. And yet, with all this display of ambitious and inventive genius, these forceps remain, in every essential feature, the same as they were when presented to the world by Smellie and Levret. Among the very great diversity offered to him the physician will, therefore, have no difficulty in making a suitable selection. In the earlier part of my practice, I used the long-handled instruments called Hodge's Modification of Baudelocque's Modification of Levret, or the ordinary French forceps. I have lately found more convenient for transportation the short-handled forceps, invented by my friend Dr. Reamy, of the Ohio Medical School, who invented them after a model of Nagelé's. It is a very good and convenient instrument.

The mode of application of the forceps is too well known to you to need any elaboration here. There are but two disputable points. In labors in which chloroform is advisable, and in what labor is it not? should it be given before or after the introduction of the blades? It is contended by some that the sensibility of the woman is our best guide in this operation. But the operation is eminently simple, and he must be a wretched bungler, indeed, who needs the screams and agony of his victim to keep him in the proper way. As the operation is in itself perfectly safe, chloroform may be first given, if for no other reason than this—that it relieves the woman from the shrinking dread with which ordinarily she anticipates any instrumental interference.

Another point is the position of the blades with reference to the head of the child. Some teachers have inculcated the necessity of applying these so that the fenestræ would inclose the parietal protuberances, and almost all the text-books give complicated directions for attaining this end. Theoretically beautiful as this may be, it is generally found that when the head is at the superior strait this nice adjustment of the blades is practically impossible; and even some of these teachers have lately admitted their knowledge of this clinical impossibility, but led astray by the beauty of the theory they have strangely confessed that they taught one thing while they practiced another. The rule is now fairly established that the blades must bear reference to the pelvis of the mother—that they should be introduced at the sides of the pelvis where there is most room and greatest ease of introduction. The clear appreciation of this rule has very much simplified this obstetrical operation.

The forceps applied, they may be used as a means of compression to diminish the dimensions of the foetal head, as a lever to change its position, or for the purpose of traction. Full directions are given in the various text-books for each of these manipulations. I will not weary you with unneces-

sary repetitions. There is but one point to which I would call your attention. The rule is laid down, by all writers, I believe, that traction is to be made during the pain, if pains exist; upon the subsidence of the pain, traction should cease, and the grasp upon the handles of the instrument relaxed. Notwithstanding the great weight of authority in support of this law, I am compelled to dissent from the universality of its application. When the head of the child is at the superior straight, or in the cavity of the pelvis, it may be correct; but when the head is near the vulvar outlet, the traction of the operator, added to the expulsive force of the uterus, vastly increases the danger of laceration of a rigid perinæum. Here is, I believe, a common cause of this too frequent accident. If, at this stage of the labor, the rule be reversed, and traction is made as the pain subsides, the operator, holding the head firmly where the pain left it, the violent intermittent force is changed to a more moderate, continuous pressure, and the perinæum is surely and safely distended. In advocating this innovation, I advocate no new principle; it is only the adaption of a principle well established in surgery. It is well known that a moderate force, continuously applied, soon overcomes the vital elasticity of tissues and the contractility of muscles. We speedily tire out the resistance of the muscles of a broken thigh by the constant application of a light weight; vigorous extension, intermittently applied, would fail to do it. In Simon's exploration, it is the continuous pressure of the hand which safely dilates the anal sphincter. Every one knows that intermittent violence would fail of its object, and would certainly cause laceration. In case of a large foreign body in the rectum, would any surgeon recommend traction only during dysenteric tormina? I can, then, see no impropriety in applying this principle, so well established in surgery, to that stage of labor in which the whole impediment to the advance of the foetal head is in the elasticity and vital resistance of

the perinæum. It is upon this reasoning that I have based my practice for several years, and both theory and observation concur in its correctness.

When should the forceps be used?

Some twenty-five years ago, when I learned lessons of practical wisdom at the feet of the Gamaliels of our profession, the forceps, when used, were held responsible for all the accidents which attended difficult or protracted labors. It was taught that they were only to be used in extreme cases—when the powers of nature were exhausted or fully proven unequal to the birth of the child. Their application was deemed something a little better than craniotomy. Briefly, let me quote a few of the text-books still upon our shelves: Cazeaux says “that there can be no doubt that the use of the forceps increases the danger of delivery.” Ramsbôtham, approvingly quoting Dr. Davis, says, “‘The instrument is *very* dangerous in its use.’” It is to be had recourse to more as an experimental means for superceding the necessity of destroying the child, than as one of the common resources of our art.” Bedford abounds in emphatic denunciations of the early or frequent use of the forceps. Leishman says, “Is it, then, to be wondered at that the operation is looked upon with apprehension as one beset with difficulties and dangers.”

Looking upon the forceps as a dangerous instrument, difficult of application, at best a choice of evils, we can understand the indications given by these authors for their use. Cazeaux says, “Therefore, the instrument should be used only when the powers of nature shall have been well ascertained.” Denman says (see Churchill), “The head of the child shall have rested for six hours, at least, on the perinæum before the application, although the pains would have ceased altogether during that time.” Ramsbotham, more explicit in his directions, says, “If, then, the pains are subsiding gradually, or have entirely disappeared; if the

strength is failing, the spirits sinking, the countenance becoming anxious; if the pulse is 120, 130, or 140 in a minute; the tongue coated with a white slime, or dry, brown, and raspy; if there have been two or three rigors; if, on pressing the abdomen, there is great tenderness of the uterus; if there be green discharge; if there be preternatural soreness of the vulva, with heat and tumefaction of the vagina; if the head has been locked for four hours, and made no progress for six or eight hours; if the patient be vomiting a dark, coffee-ground like matter; if there be hurried breathing, delirium, or coldness of the extremities, then we are, at any rate, warranted in having recourse to the forceps"!!!

This is the testimony of the most skillful of our profession, and the teachings of the text-books of to-day. Is it at all strange that, when these directions were followed, that woman and child died after, not from, the use of the forceps? Is it at all strange that many physicians have been, and are yet, deterred from their use, while the child dies and the mother incurs all the great risks of exhaustion, of inertia, or rupture of the womb, and the evils which follow the prolonged pressure of the foetal head in protracted labors? With such exaggeration of the dangers of the forceps, and the difficulty in their application, is it at all strange that, in the last meeting of our State Medical Society, men, who had grown white in practice, should boast that they had never used them. For such men as these, Paul Chamberlen lived in vain.

But what evidence do these authors offer that these instruments are injurious in their use? Only this: that when the woman has lain for hours in the second stage of labor, and eventually has been relieved by the forceps, some have died from exhaustion or hemorrhage from inertia of the womb, or some have lived and dragged out miserable existences, with disgusting fistulas or the painful results of pelvic in

flammations. And all these accidents have been charged to the forceps. And all these accidents are only the results of protracted labor. These authors have forgotten, or have failed to see the force of, the comparison of Smellie, that the forceps are hands—prolongation of the operator's hands—which embrace the foetal head, and move under the control of his intelligent brain. These thin polished blades of tempered steel, adapted to the pelvic curves of the woman, and moulded to the head of the child, may fail at times in their intent, but can not, in careful and competent hands, do injury.

Believing, as I do, that the forceps in competent hands—and none other should touch any instrument—are absolutely safe for mother and child, and that there is seldom any difficulty in their application, my rule for the time of their use has been very different. I anticipate all the dangers of exhaustion and delay, and in any case in which there is not obstructive deformity of the pelvis, I unhesitatingly apply these instruments, when in the second stage of labor, from failure of pains, or from any other cause, there is arrest or retardation of the foetal head, deeming myself justified if by their use I can save to the mother one hour of suffering and danger. This, for years, has been my rule for instrumental interference.

I have neglected to keep a record of my whole obstetrical practice; but to show to what extent I have relied upon the forceps, I find that in two years, in sixty-eight cases, I applied these instruments twenty times. This is nearly once in three cases, and I can conscientiously say that I believe, with the exception of laceration of the perinæum—an accident I have now learned to avoid—I have never injured mother or child.

For this early and frequent use of the forceps I expect to receive the fierce denunciations of those physicians who, as they say, "wait and trust the powers of Nature." It sounds

well to talk of trusting to Nature. It is sweetly suggestive of green fields, of flowery meads, of singing birds, of the gentle lullaby of breeze and falling waters, and brings to mind all the pleasant sights and sounds which amuse us in a summer's ramble. But is Nature always so perfect and pleasing? Does she always rightly adapt her means to a beneficial end? Does she never make mistakes? I recollect Brudenel Carter says that no optician would dare to make an optical instrument as imperfect as the human eye; and this is not the only illustration of her incompetency. Does not the sun, which warms us, in his fiercer moods, burn our unprotected skin? Would not the unguarded cold of winter soon stop the current of our blood? May not the life-giving air, which now bears grateful freshness to us, bring sudden death upon the swift wings of the hurricane? Is not our whole life a war against the destructive forces of Nature? If Nature is so kind, so sufficient to herself, what do *we* here? The very fact that our profession exists is the proof of her insufficiency. Every moment of a busy doctor's life—every dose of medicine he gives—offers new evidence of this fact.

This is not, then, the teaching of science or experience. It is not the language of good sense. Let us relegate this delightful but delusive looseness of expression to where it belongs—to the realm of imaginative poetry. For he who talks of trusting to Nature in medicine—in the sense that Nature is always to be imitated—only follows the crazed imagination of the dying Falstaff, and “babbles of green fields.” Let us trust Nature when she is right, for she is not always wrong; but recognizing her errors, set her right when she is wrong.

In conclusion, I would submit for the consideration of this Society the following propositions, which embrace the substance of this sketchy article:

1. That the forceps are, in competent hands, absolutely safe for mother and child.
2. There being neither danger to mother or child, they

may be applied at any time in the second stage of labor; when the foetal head ceases to advance, or it is necessary to hasten the delivery.

3. That the long are preferable to the short forceps.

4. That in their application reference should be had more to the pelvis of the mother than to the head of the child.

5. That when the head of the child is at the superior strait, or in the cavity of the pelvis, traction *may be* made during the pain, should pain exist; but when the head is pressing upon the perinæum the rigidity and elasticity of this organ are more safely overcome by a force continuously applied, and therefore, traction should be made in the interval and not during the continuance of the pains.



ART. II.—*Bibulous Paper, and its Use in the Treatment of Venereal Disease.*
By GEO. HENRY FOX, M.D., of New York.

A year ago the writer, in a paper read before the New York Medical Journal Association, called the attention of the profession to the use of thin bibulous paper. This article was then recommended as a cheap, cleanly, and convenient absorbent, capable of superseding to a certain extent the use of lint and sponges. Having for some time used it almost daily, and been thanked by so many for having suggested its use to them, I am certain that the reader who now tries it for the first time will not only find it suited to a variety of purposes, but will soon regard it as quite indispensable.

By bibulous paper is not meant blotting paper, or filtering paper, but a thin, porous, tissue-like paper, which is extensively used by dentists for the purpose of absorbing the saliva in operations upon the teeth. It is of French manufacture, comes in sheets, fifteen by twenty inches in size, and can be bought for about \$4.50 per ream. What is known

as Japanese paper answers the same purpose. It comes in smaller sheets and costs a trifle more. The latter has a grain or fibre, and can be rolled into a firm cord, while the former when wet is reduced to a pulp. In China and Japan this soft paper is commonly used, I am told, as a handkerchief, and by ladies as a menstrual napkin. I have known of bibulous paper being used for the latter purpose even in this country. Confining ourselves, however, to its strictly surgical use, we will find this paper more convenient than a sponge in the trifling every-day cases where only a drop or two of blood is drawn, or a little pus evacuated. A half sheet, or less, can be taken, squeezed to a soft wad, or artificial sponge, used as occasion demands, and thrown away. No basin of water required to soak a dried-up sponge! No towel required to wipe wet hands! This may sound trite, but five minutes saved once or twice during office hours is not a trifling consideration. Suppose the edges of a wound or an ulcer to be covered by a copious discharge, or an ulcerated throat, or os uteri, obscured by muco pus. A pad or swab of bibulous paper held in the fingers, or long forceps, will generally cleanse the surface as well as cotton lint or rags, and is far more convenient to use. For plugging sinuses, packing abscesses, and especially for application to wounds or ulcers with a fetid and irritating discharge, it is admirably adapted. In exuding skin affections I have used it, but have found it of little worth. In my venereal service at the New York Dispensary I have used this paper extensively, and found it of great value, particularly in the treatment of genital sores.

It is serviceable, in the first place, in the *cauterization* of chancroids, a plan of treatment, which though discarded by some, is still in good repute with the majority of surgeons. The use of a glass rod or brush in applying acid to a chancre, or indeed to any surface, is objectionable on two grounds. The desired amount of acid can not be accurately

applied, and the subsequent cleansing of the rod wastes a little time. The use of a tuft of cotton, rolled tightly around the end of a probe is a better plan, but a little trouble is involved in wrapping the cotton around the probe, and then after using, more trouble is often occasioned in scraping off the moist adherent cotton. The best and simplest plan I have found is to roll bibulous paper into small pellets of varying size, when with a pair of light forceps curving toward the points (such as used in microscopic work), a caustic liquid can be applied speedily and safely. Supposing nitric acid to be used, the requisite amount, and neither more nor less can readily be obtained by seizing with the forceps a pellet adapted to the size of the sore to be cauterized. No special care is needed to protect the surrounding parts, and the wet pellet when held sufficiently long upon the sore can be quickly dropped from the forceps into any appropriate receptacle. I have adopted this method in cauterizing lupus, warty growths, etc.; and, in fact, I know of no better plan for the application of any strong, liquid caustic to any surface whatever, than by the use of this paper.

Bibulous paper is serviceable, in the second place, in the *dressing* of venereal sores. The best dressing for a suppurating sore is evidently that which will keep the discharge constantly absorbed. An ointment or a lotion will not do this, though of some use when the sore is chronic or in the healing stage. Lint or cotton is unpleasant, if not difficult to remove. A powder, if not frequently washed off, is apt to form a crust, and washing the part too frequently may increase the inflammatory condition or retard the healing process. But bibulous paper readily absorbs the discharge, and, if frequently renewed, keeps both the sore and the surrounding part in a cleanly condition without any washing whatever. It is readily applied, and often is all that is required after cauterization, and will even suffice to effect a cure in a reason-

ably short time without this. Bumstead, in speaking of the treatment of chancroids, says that "ointments of whatever kind are not only useless, but positively injurious." He says, furthermore, that "there is no better dressing for most chancroids situated upon mucous membranes" than dry lint. My own experience confirms this view respecting the relative worth of lint and ointments, but in bibulous paper, I think, we have at command an application which is, in every respect, equal, and, in some points, superior, to lint.

In balanitis and balano-posthitis, which, in dispensary practice, are so frequently met with, both alone and in connection with gonorrhœa, there is no treatment more efficacious than simply placing a folded strip of this paper in the post coronal sulcus and a single layer between the glands and prepuce, and ordering the patient to change it frequently. In an affection which is so readily cured by keeping the mucous membrane *clean and dry*, the astringent and caustic lotions usually recommended are simply absurd.

In venereal sores of the urethral meatus, which are often so refractory under treatment which succeeds in healing sores upon the glans or prepuce, the patient may advantageously urinate with the glans immersed in water, and insert a small plug of this paper into the urethra after each act.

For any sore, in short, upon the glans, penis, or upon the mucous surface of the prepuce, or wherever there is any natural moisture, or a morbid desire to discharge, the use of this paper will be found to be as much more efficacious than most approved applications as it is more simple.

In gonorrhœa of the female, and in leucorrhœa, the absorbent qualities of the paper will tend, at least, to the promotion of cleanliness, and in cases where an ulcerated os uteri is constantly bathed in an acrid discharge from the cervix, its use is highly satisfactory.

Bibulous paper may be medicated with antiseptic astring-

gent, and various other solutions. To effect this, the paper can be saturated with spray or immersed in a solution, and, after being carefully dried, kept in a corked bottle, should the volatile nature of the medicament require such care. A substitute for the well known styptic cotton is easily obtained by saturating the paper in a solution of the persulphate or perchloride of iron. It takes a dark orange or brownish hue, may be used whenever a decided astringent or hemostatic effect is desired. A piece can easily be carried about in a pocket-case or note-book, and comes into play in many of the trifling emergencies where a slight styptic is always wanted and never at hand.* I have used paper medicated with carbolic acid, boracic acid, thymol, iodoform, etc., but the trouble of medicating the paper is not counterbalanced by any marked increase of virtue, save in case of the styptic mentioned. The use of the plain paper, however, as an absolvent, I can heartily recommend.

203 WEST THIRTY-FOURTH STREET, NEW YORK.

ART. III.—*On the introduction of Cholera and other infectious diseases into Hospitals, Prisons, etc.* By JOHN C. PETERS, President of the Medical Society of the county of New York, etc.

The introduction of manifestly *contagious* diseases into hospitals, asylums, and prisons is easily recognized, but it is far different with *infectious* diseases, which are far from being contagious, in the ordinary sense of the word, but which are really conveyed from place to place by persons and things, and often in the most mysterious ways, into barracks, asylums and penitentiaries.

A most important work on this subject has lately been published by Dr. Max Pettenkofer,† who always admits that “the distribution of cholera from place to place is effected by human intercourse” (see introduction), but is often

*This styptic paper is prepared in the form of little books, by F. Bagoë & Co., corner Fourth avenue and Twenty-ninth street.

†Outbreak of cholera among convicts, an etiological study of the influence of dwelling, food drinking water, intercourse, etc., upon the course of cholera, etc. J. B. Lippincott & Co., Philadelphia, 1876.

equally puzzled to decide "how this is done." He is particularly in doubt how cholera got from Munich, in 1873, to the great Bavarian prison, at Lanfen, although this is comparatively clean to others.

Thus, in 1869, 911 cases of cholera had been reported in Russia. In 1870, there were no less than 20,140 cases. In 1871 this amount was swelled to 305,220 cases. From October, 1871, to December, 1873, there had been 433,295 cases in Hungary. In April, 1873, it reached Vienna, and in June it was carried to Munich.

From the Munich prisons, in which cholera had already broken out, 123 convicts were sent to the penitentiary at Lanfen, some of them arriving with choleraic diarrhœa, and some with cholera, but the first few deaths occurred among prisoners who did not come from Munich, and who had been in prison for several weeks, months, and even years.

This is a very common occurrence, and has been satisfactorily explained over and over again, but Pettenkofer, from a false and prejudiced view, has allowed himself to become puzzled and befogged. In 1854, Pettenkofer understood the choleraic-diarrhœal origin of cholera, and believed that the primary discharges were more infectious than the rice-water evacuations.* He then believed, with the majority of the epidemiologists, that the poison of cholera gets in the drinking water and food of the next victims, and is actually swallowed down into the stomach before it will reproduce itself. Now he believes that the cholera-evacuations must get down into the subsoil, and underground water, and then reappear like a miasm, like that which produces fever and ague.

But in the tremendous outbreak in the prison at Lanfen, the first cases occurred in the second and third stories of the building, which had a basement and cellar underneath, and on the persons of those who had been exposed to the emanations of the foul and overflowing privies, which had been

*See Peters's notes on cholera. Van Nostrand, New York, 1867, p. 54.

used by the new-comers from Munich, especially among some decrepid old men, who peeled potatoes in a cellar into which these privies had overflowed, but who slept in the upper stories of the prison.

In this large establishment it was difficult to trace out these and other occurrences of a like kind. But the privy-pails and tubs used in the sleeping-rooms were also washed out every morning in the hospital yard, near the only well which supplied the prison with drinking water. Because Pettenkofer examined the drinking water three months afterwards, and could detect no trace of choleraic discharges in it; and because he put twenty-five pounds of salt in one of the drains which ran nearest to the well, and could find no trace of salt, on chemical examination, he concluded that the drinking water could not have been in fault. If he had put 2,500 pounds of salt into the drain he would doubtless have found some of it in the well, although it was large enough to supply over seven hundred people with water for washing, drinking, and cooking. Besides, when he examined the water, the washing of privy-tubs and pails near the well, with water drawn from it, had been forbidden for three months.

Eighteen cases of diarrhœa, some of them choleraic, had occurred before the first case of cholera was reported. Some of the strong convicts were still suffering from severe and mild diarrhœa, when weaker persons, who were attacked later, had already succumbed to cholera. Pettenkofer does not seem to be aware that the first manifest cases, and the first deaths of cholera are not always the *initial* attacks, although he supplies a remarkable instance of this on pages 64, 65, and 66.

One of the overseers of the prison, Mildhammer, went to his home, in the town of Lanfen, was attacked with cholera and died. A woman, named Ensmann, nursed the overseer while he was sick with cholera, washed his bed and body-

clothes after his death, and also his close-stool, or night-chair, and all other objects used by him. She returned to her distant home, doubtless with her dirty clothes and hands, prepared food for her two children, aged twenty and thirty months, and in a few days they died of cholera, one in thirteen hours, the other in fourteen. Mrs. Ensmann seemed well herself, but doubtless had choleraic diarrhœa, for she was attacked with cholera the same night and died in ten hours. Pettenkofer says "the cholera of which Mrs. Ensmann and her children died was certainly no other than that of which the overseer, whom she nursed, also died." Pettenkofer saw Mrs. Ensmann, "but as one of her children was lying dead, and the other moribund, he left the house in order to make further inquiries at a more convenient season." When he returned next day Mrs. Ensmann was dead, and Pettenkofer naively says: "Mrs. Ensmann had taken her secret with her to her grave."

He can understand how Mrs. Ensmann contracted cholera from the overseer, but he strangely enough can not see how she gave it to her children, as he forgot to ask her whether she had diarrhœa, or whether she had washed her hands thoroughly before she cut bread or peeled potatoes, or prepared other food for her children, or handled their cups or plates, etc., etc.

In Chattanooga, in 1873, the first death from cholera was a little boy who had been sick in bed with measles and pneumonia for ten or twelve days. But his mother kept a boarding house for railroad employés from Nashville, some of whom visited the little boy, had choleraic diarrhœa at the time, and died two days after the little boy, with cholera.

In Lancaster, Kentucky, a Mr. Benley, coming from Jonesboro, Tennessee, was attacked with cholera, but partially recovered, and finally died in the typhoid stage. His was the first or *initial* case; but his father-in-law and a negro servant who waited upon him, and fifteen others who were exposed,

died before Mr. Benley did. The initial case was the eighteenth death.

It is certain that many cases of choleraic diarrhœa, and some deaths, occurred in New Orleans, in 1873, before any cases of cholera were reported. There was cholera in Hamburg in 1871, and in August, 1872, there were no less than one hundred and seven cases in one week. It has never been denied that cholera was not introduced into New Orleans in 1873 from Hamburg, although it may have come from other places. On page 112 of the United States Cholera Report for 1873, we read that the physician who had control of the Mississippi quarantine station during the winter of 1872-73 was dismissed for allowing Cuban yellow fever ships to pass up to New Orleans without proper disinfection. He is supposed to have allowed the yellow fever of 1873, which caused such terrible ravages in Memphis and Shreveport, to slip into this country, and also the cholera, the origin of which puzzled the South-western physicians so much.

If we only count the severe and fatal cases of cholera, the conveyance of the infection will always remain as great a riddle as if we were only to enumerate the severe and fatal cases of scarlet fever, and ignore the mild cases. We shall always remain in the dark if we regard the first severe or fatal case of cholera as the *initial* case.

ART. IV.—*On Trephining in Epilepsy.* Read before the Academy of Medicine of Indianapolis, by J. LIVINGSTON THOMPSON, M.D., of Indianapolis.

Thomas Jefferson, Private, Fourth United States Colored Artillery; æt 42; eight years prior to enlistment was struck upon the head, causing a fracture near the mastoid portion of the temporal bone. He states that he was "knocked dead" for some time, and unable to work for three months, and then had a "fit," and after about eighty days a second one, and soon afterward had monthly paroxysms.

He also stated that he was treated by several physicians of New York, but benefited by none.

In October, 1864, he presented himself for a discharge, when the signs of an old fracture were distinct. The "fits" never varied more than two days from being monthly, and were preceded by sickening epigastric pain and drowsiness for one or two days.

I saw him in the latter part of February, 1865, with a true epileptic convulsion, and trephined him directly over the seat of fracture.

A splinter of bone was found pressing upon the dura mater, and removed. The wound was closed with silk suture, and cold water dressing applied.

He did well until the third day after the operation, when he had delirium, caused by drinking an ounce or two of whisky which he had begged from one of the nurses. A few ounces of blood were taken from his arm, and he became calm in a few hours. He had no medicine, except a dose of sulph. magnesia, until suppuration had fairly set in. Nitrate of silver was then given him for two months.

The scalp healed in two months, and October 2, 1865, (when I left the post), he was on duty, and had been for several months, having had no return of the disease since the operation.

Is trephining as dangerous as is taught in our text-books?

Fifteen cases of removal of bones of the head fell under my notice during the siege of Vicksburg, only one of which proved fatal, and that from intoxication three months after the operation.

I think that few die from the effects of trephining, but many from the effects of the injuries for which the trephine is used.

I am convinced that adhesive plaster should not be used in recent wounds. It does not bring the edges as accurately together as sutures, especially in crucial incisions of the

scalp; it does not permit a thorough inspection of the wound, and it leaves a gummy deposit which is removed with difficulty.

But two cases of erysipelas of the scalp, after the operation, have come under my notice, one of which occurred where adhesive plaster had been used.

James Fox, a farmer, æt. 40, of Braysville, Dearbourn county, Indiana, gave me the following history:

While plowing, in June, 1866, his horses became frightened, ran off, and dragged him after them a long distance; that when discovered by his neighbors he was insensible, and that it was soon discovered that he had received a terrible wound on the right side of the head, which was apparently caused by the sharp point of the plough.

A physician was called, who failed to detect any fracture or depressed bone, and he simply sewed up the wound.

On the last of November, 1866, the patient had a convulsion during the night, which was pronounced night-mare. In February, 1867, another convulsion made its appearance while he was eating dinner, which was pronounced epilepsy. He then went to Cincinnati, Ohio, and placed himself under the treatment of the late Prof. G. C. Blackman, who immediately discovered the fracture. He was taken before the class who were in attendance at the Ohio Medical College during the term of 1866-67, at which time the late Professor spoke of the different methods of treatment in such cases. Trephining was mentioned, simply, however, to be condemned, owing to the fearful mortality which followed the operation in his (Prof. Blackman's) practice, as well as in that of many others.

He was treated with the bromides, and with counter-irritants, until August 19, 1867, when he had another convulsion.

He then sought the advice of nearly every physician within thirty miles of his residence; and as I had just located

in Harrison, Ohio, he also presented himself for my opinion. On examination, a well-marked, depressed fracture was found, which embraced the superior portion of the temporal, and the anterior, inferior portion of parietal bones of right side. My opinion was given as follows: Taking into consideration that he had been in the hands of one of the most eminent surgeons of the land, he had, in all human probability, tried all useful means, short of an operation, with but little benefit therefrom, and as the depressed bone was so markedly the cause of the trouble, nothing short of its removal could be relied on, and it might not cure, and as he was a *bachelor* it did not amount to a great deal if death did result therefrom. I would, were I in his position, prefer death to epilepsy and semi-imbecility.

He fully concurred with me, and promised to put himself under my treatment, but instead of doing so, he immediately placed himself under the treatment of Prof. W. H. Mussey, of Cincinnati, Ohio. He was taken before the class of the Miami Medical College, and was again treated with large doses of the bromides, until April 21, 1868, when another convulsion made its appearance. Another on the 30th of the same month.

He again came to me May 4, 1868, requesting me to treat him as I thought best. He was ordered half an ounce of sulphate of magnesia, with a view to an operation the next day.

May 5, 1868, assisted by Drs. West and Thomas, of Harrison, Ohio, and Soddors, of New Trenton, Indiana, a crucial incision was made through the scalp, and a disc of bone was removed from the immediate vicinity of the middle meningeal artery. Said artery bled for a few minutes, and then ceased without any treatment. Some vessels of the scalp continued to bleed in spite of torsion and astringents, and were not controlled until the edges of the incisions were brought together by interrupted suture. A light fold of linen

was placed over the wound, and gently bound down with a roller bandage. He was then placed comfortably in bed, and nothing further was done for twenty-four hours, after which cold-water dressings were used, and continued until suppuration was fairly established.

On the tenth day an incision was made at the lower part of the former incision for the purpose of evacuating a small amount of pus.

May 24th, I made my last visit, and found the scalp entirely healed and sound. He had not a bad symptom throughout. On examining the portion of bone removed, we found that the lower was driven entirely under and away from the upper fragment, thereby causing a ridge almost one-third of an inch in thickness.

The dura mater was thickened very much immediately beneath, and in a line corresponding to that of the fracture.

The patient was advised to keep quiet during the following summer, but instead of following said advice he worked in the harvest field, pitched hay, and indeed went about his business as though nothing had ever been wrong with him. On the 6th of October, 1868, just as a political procession was passing his residence, with drums beating and banners flying, he saddled his horse, and was in the act of mounting with the intention of accompanying the delegation, when he fell with another convulsion. I learned from his relations, however, that it was the lightest, and of the shortest duration of any which they had witnessed. It is now nearly five years since the last paroxysm, during which time the patient has been entirely free from any symptom of the same.

† In the transactions of the Indiana State Medical Society, at its sixteenth annual session, held May, 1866, I reported a successful case of trephining for epilepsy. It was that of Thomas Jefferson, a private in the fourth U. S. C. Artillery,

† First case detailed in this paper.

heavy. A similar case to that of Fox; of nine years duration; and one in which the paroxysms were monthly. He had no return while under my notice, which was during a period of nine months subsequent to the operation.

I know the thought will suggest itself to most of you: Is there any thing wonderful in a case of trephining in epilepsy?

There is not. But when we take into consideration that of late years the operation is scarcely ever resorted to, or even spoken of, unless for the purpose of being decried, and when we examine one of our most popular surgical text-books, viz., that of Professor Gross, we find, on page 153, vol. 2, "I have myself had occasion to perform the operation four times, with the effect of one cure and three deaths, and I have witnessed its execution in three other cases, all of which terminated fatally. Nearly all of the patients perished within the first week from inflammation of the brain and its envelopes."

In further proof of the above evidence that the operation is falling into disuse, we have but to submit this case of James Fox, who was treated by two distinguished surgeons by medical means alone. I have also had the honor of a conversation with the late Professor Blackman, on several occasions, and he told me that all of his cases have terminated fatally.

The operation *per se* is, in my opinion, one of the simplest, and is safe beyond description.

I could mention sixteen cases which I have seen and had to do with in military and civil practice, all of which recovered. One, however fell dead upon the streets of Memphis three months after the operation, but his death resulted from intoxication. Whether this would have occurred had he not been trephined is questionable.

In most of the cases with which I have had to do stitches have been used in the scalp instead of adhesive plaster.

My object in bringing these cases before the Society is the

endeavor to elicit a discussion from the members of this Academy concerning the pathology of this obscure disease.

Just how the removal of a disc of depressed bone can cure a patient, many years after the disease has become thoroughly established, is more than I am able to understand, and for this reason I bring it before you. Can it be the perturbation of nervous functions caused by the operation, or the difference in atmospheric pressure on the brain after the operation that brings about the cure? or is it something so occult as to be beyond our comprehension.

ART. V.—*Treatment of Phthisis.* By CHARLES G. POLK, M.D., Philadelphia, Pa.

Notwithstanding no method of treatment has yet been devised adequate to the cure of phthisis, we find when we compare the duration of the disease now and formerly, it has been, on an average, quadrupled during the past twenty years, and the mortality very much diminished, exhibiting at least a marked advance of science on the road to ultimate success. The researches of Virchow, Niemeyer, and Rindfleisch have modified preëxisting pathological views, and, no doubt, have diminished, in consequence, the fatality of chronic pneumonia by leading to more rational treatment. While Niemeyer was correct in saying that the worst thing that can happen to a phthisical patient is the development of tubercles, he could equally as truly have said that nearly all the ill consequences that follow tubercles result from the inflammation they induce. The inference to be deduced from this is, that while chronic pneumonia has been treated as an asthenic inflammation, an asthenic inflammation plays an important part in the role of tubercular phthisis; and, in consequence, we are to infer that the errors amended on the one side have more than counterbalanced the errors committed on the other.

Chronic pneumonia is the scourge of northern countries, while tuberculosis more especially prevails in temperate and tropical ones. In our country this distinction is well manifested. A very large per cent. of eastern and New York persons, whom I have met in Florida, were not really tubercular, while at least eighty per cent. of those from the southern and south-western states were unquestionably so. But nowhere is the distinction so marked as between France and Southern Europe, on the one hand, and Prussia and Northern Germany on the other. France seems to be the hot-bed of tuberculosis, while no country is probably so free from its ravages as Prussia; so, really, the differences between Virchow and Louis exist in nature. Each has recorded accurately what he saw.

While we may not be able always to draw an unerring line of distinction between the two forms, there are differences sufficiently marked to enable us to recognize the one from the other. As a rule, tuberculosis—the result of cachexia—often has a family history, while chronic pneumonia generally has not. Tuberculosis generally begins insiduously, and progresses slowly and even irregularly, with numerous delays, and gradually developing its character. Chronic pneumonia usually dates back to an attack of either pneumonia, pleurisy, or bronchitis, in the acute or sub-acute form. Tubercles select, except in the acute form, the posterior portion of the apices of the lungs. Chronic pneumonia abounds in the center of the lungs, probably more often in the anterior portion. Chronic pneumonia presents the symptoms of an asthenic inflammation, while tubercles, apart from the cachexia they accompany, produces but little phenomena, unless inflammation is induced. The two, also, require modifications of treatment. Cod liver is the *par excellence* remedy in tuberculosis, while in chronic pneumonia it is often contra-indicated, and in marked inflammatory stages can only do harm; but on the other, the typhoid

grade, of all the processes of chronic pneumonia, must be equally remembered.

Chronic pneumonia has, in my hands, been benefited by the following plan of treatment more than by any other:

If seen in its earlier stages, before there is any very great amount of lung disintegration, with considerable soreness around the chest, and harassing cough with only a slight amount of expectoration, I find it a good plan to begin treatment by giving ten grains of blue mass and ten grains of rhubarb. It stimulates the secretions and prepares the system for other remedies. The following pill combination is seldom without advantage:

R. Pl. Hydrarg, grs. iij
Pulv. Camphoræ, grs. xviii
Pulv. Ipecac, grs. iij
Pulv. Quiniæ, grs. xij

M. Divide in pill No. xij

Take one pill thrice daily.

Very often in a few days there is a marked amelioration in all the symptoms. I seldom continue the mercury over a week, but the other ingredients are continued as long as any good accrues from them. If, however, the inflammatory symptoms prove obdurate, I find a combination of aconite, chloride of ammonium, and phosphate of ammonium to prove of great advantage.

The following is a common formula of mine:

R. Chloride Ammonii, 3ii
Phosph. Ammonii, 3ii
Tinct. Aconite Rad qtt. xii
Codiaë, grs. vj
Acid Phosph. Dil. 3iij
Mucil. Acaciæ, q. s. ad. 3vj

To this some aromatic tincture may be added, if the patient can not take the preparation without it. A table-spoonful may be given every four hours.

The inflammatory symptoms being brought into abeyance, some of the preparations of iodine come into requisition. My preference has fallen upon iodides of ammonium and manganese; not because of their novelty, but because, after trying the whole family of the iodides, they have given the best results. The typhoid nature of the disease requires a tonic, and, in fact, forbids the use of all depressing agents, yet we need an agent which will obviate, as much as possible, the process of tyrosis. After trying iodide of potassium in combination with gentian and colomba, I prefer the iodides of ammonium and manganese. They may be thus combined:

R. Syr. Mangansii Iod., 3i
 Ammonii Iodide, 3i
 Tinct. Gentian Comp., 3ij
 Aqua q. s. ad. 3vj. M.

Sig: Dessert spoonful thrice daily, two hours after meals.

The water used should be distilled, as ordinary water decomposes the manganese and forms a higher degree of oxidation.

If there, however, be much cough and expectoration, morphia, in combination with liq. ammonium acetate and sweet spirits of nitre, often gives very prompt relief. My formula is—

R. Lqi. Ammonii Acet., 3v
 Spts. Aetheris Nitrosi, 3xii
 Ant. Potas. Tart., grs, $\frac{1}{2}$
 Morphiae Acet., grs. ii

M. Syr. Acidi Citrici.

Sig: Tablespoonful at bed-time.

This gives, generally, a good night's sleep, from which the patient arises refreshed and stronger; often with a good appetite for his breakfast. This combination seems in many cases, however, to obviate night-sweats and the hectic fever, both of which are more prominent symptoms in chronic

pneumonia than in tuberculosis. For the night-sweats, atropia and oxide of zinc form our most efficient remedies. About one-hundredth of a grain of atropia and two grains of the oxide of zinc, given morning and evening, in the form of a pill, often breaks up this distressing and debilitating complication. Had Niemeyer used these, he would never have written so despairingly of all remedies in this condition. For hectic fever we find our best remedies in the bisulphate of magnesium, in sulphurous acid, in carbolic acid, permanganate of potassium, and liquor chlorinate of sodium.

From small doses of the permanganate of potassium I have witnessed the most delightful results. In some cases it not only arrests the hectic fever, but also the progress of the disease.

The following case illustrates its value: Mr. M——, a merchant from Boston, applied to me for treatment in 1866, at Gainesville, Florida. He had come to Florida for his health in the fall of 1865, but at St. Augustine he had rather lost than improved—coming into the interior, hoping that the pine forest and distance from the ocean would be to his advantage, but up to the time I first saw him there was no improvement. I first saw him in January, 1866. He had had frequent hemorrhages; had diarrhœa, and was much emaciated; had also a troublesome cough, and an abundant purulent expectoration. I traced his trouble to the oft-told story, an uncured attack of pneumonia.

I gave him small doses of the permanganate of potassium—not so much because I had a preference for the article, as because it was the only antiseptic at my command—and also gave him as a tonic the syrup of the phosphates of iron, quinia, and strychnia, with an opium and camphor pill at bedtime.

At once a marked improvement was evinced; the diarrhœa was controlled, the hectic was soon gone, the appetite returned, and I left him quite improved in March. I gave

him no other treatment, except twenty grains of phosphate of ammonium with each dose of the phosphates. He called to see me in May, 1866, at Charleston, S. C. He was then gaining flesh, and pronounced himself well. I saw him last in 1872, and he then seemed to be in the enjoyment of vigorous health. I had much trouble in persuading him at first that he did not need cod liver oil.

If diarrhœa be present, its peculiar character should be studied, and it treated accordingly. I have seen more than one case which for weeks had defied the whole paraphernalia of astringents, yield at once to ten grains of blue mass. If it depends upon acidity, lime water or bicarbonate of sodium will generally vanquish it; but if it results from ulceration, my decided preference is for sulphate of copper and opium, in the proportions of one-fourth of a grain of the former to half a grain of the latter. The objection to this combination is, however, that in many cases it gripes and causes pain to a degree that forbids its use. Under such circumstances I have used the following combination with the most satisfactory results:

R. Bismuth Sub. Nit., ʒii.
 Sacch. Pepsinæ (Sheffez's), ʒii
 Pulv. Ipecac comp., ʒij
 Tannin, ʒ

M. Div. in chart No. xij.

Sig. One every four hours.

This and similar combinations are, however, inferior in many cases to the liquor ternitrate of iron, given about four times a day in doses of twenty drops diluted in water. Several cases which defied the copper I have seen yield to the iron, and I have also seen the copper succeed after the iron had failed. The diarrhœa is, however, far more amenable to treatment than when it accompanies tubercular phthisis. Counter irritants are exceeding valuable in chronic pneumonia. I prefer a mixture of sweet oil and croton oil in

equal portions; it forms a manageable and less painful eruption than that introduced by tartar emetic. With some nervous ladies I have been compelled to use tincture of iodine. I make it about one-fourth stronger than the official preparation, and paint the chest freely and frequently, and find it answers quite well, but I do not like it nearly so well as the croton oil.

In review, I will add: Cod liver oil seems to possess but little efficacy in pneumonic phthisis under the most favorable circumstances for its use; and in many cases, especially those presenting more or less asthenic evidences of inflammation, it does positive harm. Iodides of ammonium, calcium, magnesium, manganese, and potassium, seem to be antagonistic to the process of caseous degeneration, and influence the hepatized lung to undergo change into oily degeneration and absorption, and thus protects the system from the damages it sustains in tyrosis. I have already spoken of my decided preference for the salts of ammonium and manganese. Manganese is quite protean in its display of therapeutical properties. A tonic, and the natural companion of iron, it also acts as a stimulant and alterative upon the glandular system, and thus modifies, silently but certainly, all organic functions. Its effect, in combination with iodine, is extremely valuable.

Muriate of ammonium does deserve a very high place in the therapeutics of chronic pneumonia. I know no one remedy which deserves a higher one. Its value has been already fully attested in nearly every pulmonary lesion. To attain its best curative effects, it should be given in scruple doses repeated four or five times a day. In combination with senegæ ipecac, morphia and brown mixture, it forms the best cough mixture that I know of in this disease. Phosphate of ammonium will be found, however, a better preparation in the advanced stages in which there is much vital depression, but forms a valuable adjunct to it at every stage, although not capable of as general use as the chloride.

Tonics are demanded at every stage, but their effects must also be measured with reference to the extent of vascular action. Iron is contra indicated if there be any fever or vascular excitement, although valuable when circumstances permit its use. Quinia is no doubt the best tonic we can find in the majority of cases, but it will sometimes increase inflammatory action and induce congestion. Strychnia, given in small doses, proves one of our most valuable tonics. The mineral acids are useful at nearly every stage. Salicine has proved always satisfactory in my hands, as far as I could expect good from a tonic. It can be given with advantage even when quinia is forbidden. While less efficient than that alkaloid, it approaches it in efficacy, and is entitled to more consideration than it has yet received. I have witnessed several cures follow the use of elecampane, hourhound, comfrey, hops, and citric acid combined into a syrup, even under very unfavorable circumstances. Brandy, whisky, and wine should be judiciously administered at every stage. Thus given, they retard disintegration, sustain the integrity of the system, and prolong life.

I believe that chronic pneumonia is curable in a very large per cent. of cases, if treated properly in its early stages; but after there is extensive exudation, hepatization, and tyrosis, it becomes almost as formidable as tuberculosis, and is probably more speedily fatal.

Tubercular Phthisis.—This has been very justly termed “the bane of human existence—the upas whose touch is withering, and whose impress is death.” The views I entertain of its pathology have modified, and directed my application of remedial agents. I regard tubercular phthisis as a dyscrasia—that the product we term tubercle is a withered and decayed white blood—corpuscles—that these are poisoned in improperly elaborated blood, and become embedded in adenoid tissue, and other tissues to decay, and become the focus of disintegration; that improperly elaborated blood results

from imperfect nutrition, and that the imperfect nutrition emanates in the following circumstances: Deficiency of pancreatic secretion, in consequence of which the fatty elements of the food are not properly emulsified and prepared for the office they fill in the heat generating process. At the same time there exists an excess of acid in the alimentary canal, which more than neutralizes the pancreatic secretion, as well as also the saliva, and, in consequence, the albuminous elements of the food are held too firmly in solution for fulfilling their part in the vitalizing of the blood, and in this step of tissue formation is generated the ferment. Perhaps it occurs in the mesenteric glands, by which the unhealthy corpuscle is formed and goes forth on its mission of destruction. But even above and beyond this must stand another cause that we find in deranged organic nerve power, which is found inadequate for the part it plays in organic functions. It is well known that all organic functions are under the dominion of the organic nervous system, and are consequently modified by the impressions it conveys. Tracing the morbid condition a step further, we find an excessive amount of phosphates in the urine, showing a rapid drain on these essentials of life. Post mortems have revealed a marked diminution in the amount of hypophosphorous acid in its normal combination with oil and glycerine in the brain and nerve structure, and this error in the phosphorous assimilating function; which seems to be inherent in naturally deficient organismal powers, seems intimately associated with the whole successions of morbid actions in tubercular phthisis.

Experience has decided beyond peradventure that cod liver oil is the best remedy yet discovered. I have a preference for the white Norwegian oil. While equally sweet as the very purest New Foundland oil, it keeps better, and I imagine it is more efficacious as a medicine. Even the purest and sweetest is, however, repugnant to most persons at first, although those who take it for some length of time lose this repugnance, and some even acquire a fondness for it. In

order to overcome its nauseousness, different modes of mixture have been devised, yet none yet offered has given absolute satisfaction. The mode I often adopt is to begin with a dessertspoonful of the oil mixed with a tablespoonful of the extract of malt, and give it half an hour before each meal. I have found this to be about the most acceptable plan I can learn from others or devise myself. A wine glass of good brown stout answers nearly as well. I have seen this do much good. I have known but very few who have followed this plan sufficiently long that did not receive marked benefit. I believe, if sufficiently early began, and perseveringly followed, it will arrest the development of tubercle in many cases. A half-ounce of extract of malt with two to four drachms of cod liver oil, is far more efficacious than cod liver oil given alone; in fact, in several cases in which cod liver oil had been used without benefit, I have given it with the malt, and found that improvement followed in the course of a week. I sometimes have been compelled, through individual whims, to give it in some other form, and to meet these caprices.

I have found a bitter tonic to be a good menstrum. I have often used this prescription with satisfaction:

R. Fl. Ext. Gentian Comp., ʒiv
 Fl. Ext. Cinch Comp., ʒiij
 Acid Nitrici Dil., ʒss
 Tinct. Nucis Vom., ʒj
 Curacao Cordial, ʒiii
 Spirits Frument. q. s. ad., ʒxii. M.

Give one tablespoonful of this with a tablespoonful of cod liver oil.

Dr. Williams, of the Brompton Hospital, often prescribes the following:

R. Acidi Sulphurosi, ʒvj
 Tinct Colombæ, ʒi
 Glycerinæ, ʒiss
 Infusion Aurant Comp., q. s. ad., ʒviiij. M.

A tablespoonful of this to be mixed with two teaspoonfuls of cod liver oil, and gradually increasing the dose to a tablespoonful. I have found this combination to act very well, especially in advanced stages, after hectic fever has supervened. I have used it in several incipient cases, in which the entire morbid process has been arrested. Whether cod liver oil alone would not have answered equally well, I can not now determine.

I have used cod liver oil with phosphoric acid thus:

R. Acidi Phosph. Dil., ℥ss
 Calcii Hypophosph., ℥i
 Quinia, ℥i
 Strychnia, grs., $\frac{1}{2}$
 Glycerine, ℥iss
 Infus Aurant Com., q. s. ad., ℥viii.

Give a tablespoonful of this with a tablespoonful of cod liver oil. In cases in which the malt and cod liver oil has not given satisfaction, I usually resort to this combination, and often find persons who have come to a halt, progress again towards health.

To the over-delicate stomach, which can not tolerate any of the forms in which it is recommended above, the following will be found as efficient as any in overcoming the scent and taste:

R. Ol. Morrh., ℥xiv
 Glycerine, ℥ij
 Ol. Cinnamonii, gtt., xxxij
 Ol. Amygdal Amaræ, gtt., x
 Ol. Aurant, gtt., xx. M.

A tablespoonful can be taken without difficulty. Sometimes, however, the stomach will not retain it, even thus given. In such cases I have given with success the following polypharmaceutical combination:

R. Ol. Morrhnæ, 3xij
Pepsinæ, 3iii
Emul Pancreatinæ, 3ii
Ether, 3ii
Acide Carbolici, Cryst., grs., viij
Ol. Amygdal Amaræ, gtt., xvj
Ol. Cinnamomi, xxxii
Ol. Auranti, xxxij
Glycerinæ, q. s. ad., 3xxi (16 oz). M.

A tablespoonful four times a day.

A year ago I tried this with decided results on a young married lady, who was very low indeed when I placed her on this combination. Marked emaciation, large vomicæ, troublesome cough, purulent and abundant expectoration, diarrhœa, night sweats, and clubbing of the nails. In fact, I deemed her a hopeless case. In six weeks after she began taking it she was able to leave her bed, and has since been able to attend to her lighter domestic duties. Several years ago I formed a phosphoid compound in this manner: I saturated heated sweet almond oil with phosphorus, and passed a current of bin oxide of nitrogen through the solution, until every trace of free phosphorus was obliterated. Upon adding some of the finished product to water, evidence of free hypophosphorus acid was at once displayed. Upon examination I found the acid corresponded with the cerebrie acid of the brain. This compound, whether an oleo hypophosphite or an oleo phosphide, is an agent of great efficacy in tubercular disease. It forms a most admirable adjunct to cod liver oil. I believe a combination of the two will cure nearly all cases of incipient phthisis, and benefit those more advanced.

The remedy, however, upon which I repose the greatest confidence, is a combination of the cerebrates of calcium, sodium, magnesium, ammonium, and manganese, dissolved in free cerebrie acid, and preserved in chemically pure gly-

cerine—the glycerite of kephaline. The following is my preferred formula:

R. Glycerite of Kephaline, 3xii

Tinct. Iodine, 3j

Pure Glycerine, 3viss. M.

Sig: Teaspoonful thrice daily, with a dessertspoonful of Loefflund's malt extract.

With this mode of treatment I have been often able to dispense entirely with cod liver oil and nearly all other drugs. The theory of this combination is founded upon the evident deficiency of these phosphoid principles in the brain and blood of those dead with tuberculosis, as determined by chemical analysis, and also by the histological discoveries of Bennett. Taking the granule as the histological unit, and subjecting this histological unit to the action of cerebrate of ammonium, it is excited thereby, and hastens to assume the corpuscular form. This can be easily demonstrated on a slide from a drop of freshly drawn blood and some cerebrate of ammonium. The inference from this experiment is that cerebrate of ammonium holds the position of an essentiality, in the development of the cell from the granule, and consequently cell elaboration can not proceed without it; in fact, there are potent reasons for regarding a lesion in cell development as the characteristic feature of tubercular disease. What are the miliary tubercles and the granulations of Bayle, but granules and blighted leucocytes?

Williams, I think, very clearly proves the tubercular corpuscle to be a dead leucocyte; and I am equally as confident that the granules which the microscope displays in an abundance are only blighted protoplasms, and receiving their blight from deficiency in the blood of the cerebrate of ammonium. Theories, however nicely spun, if not true, give way before intelligent experience. I have now for nearly four years been subjecting this to the test of bedside observation. I have tried this glycerite of kephaline in a hundred unques-

tionably tubercular cases, and in seven-tenths of them I have seen great advantage derived. So uniform has been the good results, that there is no longer any doubt in my mind that the glycerite of kephaline is by far the most efficient known. The remedy next in efficacy is the protagon, which differs from the above named remedy in containing all the phosphoid constituents of the brain; while valuable, it has never met my wishes so satisfactorily as the glycerite of kephaline. It may be said that glycerite of kephaline sustains the same relation to protagon that quinia does to the cinchona bark, not embodying all the brain principles, but contains those which immediately subserve brain function. The query here naturally comes, if the cerebrates, which are only brain hypophosphites, are so efficient, why not use the hypophosphites of Churchill? The objection is embodied in the following quotation: Andre Sanson says that the "phosphates that are manufactured in the laboratory are not such as should be used, because their form does not allow of their assimilation."

Dr. Tilbury Fox, a distinguished writer on skin diseases, says there is something essentially special in the organized phosphates; in fact, that they have been formed by passing through a living organism, as compared with those artificially made. It is not the amount, but the kind exhibited, which produces the good results. Dr. Percy, in his essay on "Phosphorous," for which the prize of the American Medical Association was awarded in 1872, says the phosphates that enter the animal system as laboratory compounds do not perform the same function as the phosphates that enter the system through the natural chemical elaboration of vegetable life.

In my elaborate paper on the "*Ætiology and Treatment of Tuberculosis*," written in the summer of 1872, I said, after detailing my experiments in removing the phosphates from the food of dogs, and supplying their place with laboratory phosphate of calcium, in which I starved the dogs nearly to death, that "these experiments prove that the phosphates

are as essential to nutrition as nitrogen to the integrity of muscular tissue, and carbon to the development of animal heat; and furthermore, the conclusion is inescapable that the phosphates which serve the purpose of animal or vegetable life must be developed in an animal or vegetable organism. It is only these which are nutriment, organismal, or take part in vital process, while those manufactured in the laboratory can not attain this relation."

From these the deduction is evident that it is only the phosphoids that are vitalized in a vegetable or an animal organism that can sustain therapeutical relation in disease, or ascend to the position of nutrients in health. If tuberculosis finds a prime faction in deficiency of phosphoids, as claimed both by Churchill and myself, the reason why the laboratory made hypophosphites (which can not be assimilable) have failed, and also the reason why the glycerite of kephaline, which contains the vitalized hypophosphites of the cow brain dissolved in brain acid and preserved in glycerine, should accomplish all that could be expected of a remedial agent.

No sane person will expect this agent to replace lung already disintegrated, nor can he expect it will remove caseous masses of previously deposited tubercle, although by exalting the vital standard it may contribute to the last named result. But I do believe it will in a very large per cent. of cases prevent further deposit of tubercles. While prophylactic against tuberculosis it is not a specific for all the lesions tubercle may induce.

While I am anxious for the profession to determine the merit of this agent, I oppose any excessive and unsustained vaunting. Whatever be its merits or demerits, let these be accurately ascertained and impartially stated.

Tonics, however, may be admirable adjuvants. The syrup phosphate of iron quinia and strychnia has my preference. The tincture of the chloride of iron and dilute phosphoric

acid with quinia is a good combination. The bark of the wild cherry is regarded by Dr. George B. Wood as second only in value to cod liver oil, and, considering the agent in its protean character as a tonic sedative astringent and antiseptic, I am not disposed to dispute its claim. These properties are so very nicely blended that it constitutes a curative of peculiar efficacy. No one has yet used the cold infusion without observing that the appetite improves; the food is better digested; that the cough is diminished; the pulse reduced in frequency; night sweats less profuse; and the hectic fever less marked. I usually give the cold infusion in wineglassful doses, in which I also add a saturated tincture of wild cherry, varying the amount from half a drachm to two drachms. Each drachm will contain about two grains of cerasin, the bitter tonic principle of the bark, which is not extracted by either water or glycerine to an important extent. I also give about twenty drops of dilute nitric acid, thrice daily, with the wild cherry. The fluid extract of the U. S. P., 1870, is a good preparation, although not quite equal in point of strength to Tilden's preparation. The syrup made officinally does not meet my wishes.

Chlorate of potassium is an agent well adapted to the advanced stages as a carrier of oxygen, and an alterative to do some good. It is an agent, however, which has never given me the excellent results it seems to have bestowed on others.

The complications which spring up in the course of phthisis require individual notice.

Hectic fever is best relieved by whatever modifies the progress of the disease; but some special treatment sometimes is indicated. A combination of sulphurous acid, fluid extract of wild cherry, and fluid extract of cinchona has, in my hand, done much to relieve it. It is less nauseous than carbohic acid mixtures, and I think equally as effectual. Carbohic acid is, however, valuable at almost every step of phthisis, and in some cases stays for a time its progress.

Permanganate of potassium, already alluded to in the hectic stage of chronic pneumonia, is a powerful anti-phthisical remedy. Although I have always accompanied its use with cod liver oil, I am sure it has never failed to do good when it did not disagree with the stomach. It seems to preserve the integrity of the blood in a considerable degree, and increased the efficacy of cod liver oil. It has a greater power in neutralizing septic elements in the blood than any known agent. Its value in septicæmia is not less marked than in the third stage of phthisis. In several instances I have witnessed very salutary results from its administration. But its tendency to derange the digestive functions is quite a detriment to its therapeutical standing, as the integrity of these functions ascends above every other consideration in the management of phthisis.

Acetate of lead, with opium, forms our safest reliance in severe hemorrhage. I never trifle with small doses; five or six grains of the lead with half a grain of opium, repeated every three hours, seldom fails to arrest it. In order to prevent the accumulation of lead in the system I give sulphuric acid in quite full doses, with small doses of sulphate of magnesium, if the condition of the intestinal canal does not present objections.

Expectorants.—This class of agents have in the aggregate done more harm than good. Out of the many thousands my residence in Florida brought under my observation, I do not recollect a single case of tubercular phthisis that was not made worse by the indiscriminate use of these compounds. Quack expectorants are almost the first resort of the phthisical. The cough is the first symptom that rivets the attention, and the first that claims their consideration. It concerns them far above every other lesion; in fact, they regard every other but a consequence of this.

Reasoning from so false a premise, it is but natural that the conclusion reached should be equally as fallacious. The

phthysical reads in the daily papers—our would-be religious papers (which are indeed the principal vehicles of the basest description), and in the quacks' almanacs—that *their expectorant* is a positive cure for coughs, colds, asthma, and consumption. The deluded wastes upon them his money and his life; while they may occasionally check the cough, they at the same time impair the functions of nutrition, and in many cases induce congestion, inflammation, and subsequent disintegration of the lung-tissue. Of these, that patented by the notorious Jayne is the most objectionable; while in some cases I have observed that it relieved temporarily the bronchial irritation; it has, as far as my experience has extended, been highly injurious to the consumptive; in fact, more so than any other similar nostrum.

While it is true that expectorants are occasionally indicated, they require the very nice discrimination in their use. Those of the nauseous and sedative character must be used with the utmost care and discrimination. Squill's tartar emetic, veratrum, and the like are even hurtful, and should never be given. Ipecac in small doses, combined with pargorie, mucilage of acacia, and an aromatic water, may be required in the early stages, when there is congestion or inflammatory symptoms present. Liq. ammonii, acetate, sweet spirits of nitre fluid extract conium, with wine of ipecac, however, seem to me to meet the indications much better; in fact, seems to be the best prescription we can often give; but as a cough mixture, the following will be found a good one:

R Mist Amygdal Dulc, ʒiij
 Fluid ext. Glycrrh, ʒviiij
 Mucil. Acaciæ, ʒviiij
 Patassii Cyanidi, grs. ii
 Acidi Citrici, ʒi
 Morphiæ Acet., grs. iii
 Spirits Nitrosi Ether, ʒvii

Syrup Sanguin Cand., ʒiij

Ext. Prunus Virg. g. s. ad., ʒviii. M.

Sig. Dessertspoonful every three or four hours.

I find this generally moderates the cough, exerts a very beneficial influence on the bronchial mucus membrane, and improves rather than deteriorates the digestive function.

In more advanced cases, I often give the following mixture. It is both tonic and pectoral, and furnishes an excellent mode of giving quiniæ, as its taste is almost entirely concealed:

℞ Mist. Glycrrh Comp., ʒiv

Fluid Ext. Prunus, ʒii

Acidi Hydrocyanici, ʒss

Quiniæ Puræ, ʒss

Morphiæ Sulph., grs. iiij

Syr. Picis Comp. g. s. ad., ʒviii. M.

Sig. Dessertspoonful every four hours.

To this I often add either the Chloride or the Phosphate of Ammonium.

The following combination of Prof. Da Costa forms a fine combination:

℞ Morphiæ Acet., grs. ij

Polassii Cyanidi, grs. j

Acidi Acetici Dil., ʒi

Ext. Prunus Virg., ʒij

Mucil. Acaciæ, ʒij. M.

Sig. Teaspoonful thrice daily.

A combination of this kind, however, is more especially adapted to non-inflammatory coughs, with free yet not abundant expectoration. I, however, prefer the following one of my own:

℞ Syrup Picis Comp., ʒij

Potassi Cyanidi, grs. iiij

Morphiæ Acet., grs. ij

Fluid Ext. Hyosciami, ʒii

Vini Ipecac, 3i

Syr. Tolut, 3iv

Ol. Sassafras, qtt. x. M.

Et Sig. Teaspoonful four or five times a day.

When the cough is convulsive with stridor and wheezing breathing, we find our best therapeutics in belladonna, stramonium canabis indica, and the bromides. The following, a favorite of Dr. Williams', of the Brompton Hospital, often acts well:

R Ammonii Bromidi Chloral Hydrat a. a., 3iss

Syr. Papav., 3ss

Aquæ Ment. Pip. q. s. ad., 3vi. M.

Take an ounce every two or three hours.

Other indications must be met as they arise, and treated on general principles.

A few general principles govern the therapeutics of both forms of phthisis. The pneumonic form must be recognized and treated as an asthenic form of inflammation; acute phthisis, as a form of septicæmia, and the tubercular form as an aberration of the digestive function. The following case illustrates the mode of treatment I have found most satisfactory, and which was attended with a result which, no doubt, can often be obtained under more satisfactory circumstances:

Mrs. J——; native of Delaware; living at No. —, Brown street, in the Bridesburg district of this city; age twenty-six; mother of three children; family history, two brothers and three sisters dead with phthisis. Her health, up to a short period before she came under my charge, had been moderately good; November 2, 1870, applied to me for treatment; for the past two weeks she had been losing flesh; appetite bad; sour eructations after eating; sense of soreness at the apex of the right lung; dullness on percussion under the clavicle; altered vesicular murmur and cough, with but slight expectoration. Although she had no recollection of

the commencement of her ill health, she was already quite emaciated. As the liver was torpid I prescribed:

℞ Fl. Ext. Senna, 3ss
Fl. Ext. Taraxici, 3iii
Fl. Ext. Gent. Comp., 3ss
Acidi Nitrici Dil., 3iv
Curacoa Cordial, 3iijss. M.

Sig. Dessertspoonful half an hour before meals.

After a week's continuance of this prescription, I gave her a dessertspoonful of cod liver oil in a tablespoonful of Hoff's extract of malt. After continuing the cod liver oil for six weeks without marked improvement, I substituted for it the glycerite of kephaline. In a few days I noticed an improvement under its use. She soon regained her health and found herself enciente; in course of time gave birth to a child with two teeth, the only anomaly of the kind I ever witnessed. A few months after its birth her health again broke down, but under the use of the glycerite of kephaline she soon regained her former vigor, and, I believe, still lives in Bridesburg to affirm to this narrative.

The most decided case of benefit from the administration of the glycerite of kephaline, occurred in a patient of mine in Bridesburg (of this city), in 1869. The patient was a butcher by occupation; had suffered from pulmonary trouble over three years; had been treated at Bellevue Hospital, N. Y. With sore throat, clubbed nails, a large vomica diarrhoea, night sweats, and evidently on the verge of the grave, he came under my charge. Put him on the glycerite of kephaline; he began at once to improve; soon his appetite became excellent, night sweats ceased, diarrhoea disappeared, cough became mitigated, and he rapidly gained flesh. His friends, as well as himself, imagined that he would soon be well, and his condition seemed to justify the conclusion. One morning, however, he had a terrible hemorrhage and died in a few minutes.

I could multiply case after case, but the only conclusion that could be drawn, is that the glycerite of kephaline is a very efficient remedy in incipient and the earlier stages of phthisis, but will not bestow an enduring benefit, though it will lengthen life and render its last months more comfortable. It will do this, but I cannot promise more in the advanced stage of tubercular phthisis.

ORIGINAL LECTURES.

ART. VI.—*Lectures on Insanity*. By DANIEL H. KITCHEN, M.D., Chief of Staff of the Hospitals on Blackwell's Island, New York. Delivered at Charity Hospital, during October and November, 1876.

LECTURE II.—MELANCHOLIA.

[Continued from page 163.]

To-day I propose to enter upon the first of the regular stages of insanity; I mean melancholia.

All cases of insanity can be traced, while in a state of development, to the emotional reflex centers upon which the subsequent intellectual acts depend and voluntary doings arise. When these emotional centers are by whatsoever cause physically unable to be the recipients of natural or unnatural impressions, the intellectual centers are necessarily out of work. They take a retrograde road of action to find what is wrong; they find no food, and go begging.

Gentlemen, when I ask you to place yourself in a possible position, where your intellectual endowments are unable to be active on account of the indifference, or rather, want of emotions, would you not feel, nay, almost exclaim, *why is this so?* There is no answer. The intellectual being looks upon a dreary chaos, a debris of the place which was once his arena of activity. You will say, how melancholy this

must be. How this must depress one's spirits to want something to ponder over and to find nothing but the nothingness.

Gentlemen, you may smile at this view of the subject. You will not find it in books. The superintendents of insane asylums often do not appreciate it, the learned theorists on psychology find no switch to this track. The statistician does not think of it, having his mind on relative percentages, and the pathologist thinks the subject so small as to require a 500 linear magnifying objective to see matter and no reason. Let these men so much gifted, learned, and great, descend into the wards of an asylum for the insane, not for a minute or an hour, but for years, talk with the insane and walk with them, read to them, play ten pins, billiards, checkers with them, enter into their ideas with them. Then, and only then, will they learn what it is to be insane, and particularly how insanity begins. If you ask an individual, once insane, but now perfectly well, "How did you feel when you began to be out of your mind?" you will receive no *satisfactory answer*, simply because the patient does not remember it, or only vaguely so, or because he can not find the words to express that strange feeling. But put the fact in his mouth, ask once an intelligent convalescent patient of an asylum the direct question: "Did you not feel at the beginning as if you wanted some emotion, some excitement, something to turn your mind upon?" and the answer will be, and with a bright smile and understanding look, he will almost joyfully exclaim, "Yes; doctor, that was it. I never knew exactly how it was, but that was it." Do you believe that patient? Gentlemen, this is the melancholia of the insane, this is the first chapter of the first stage of insanity, and thankful may the sufferer be if he is saved at this stage. This is the deep, painful feeling of profound depression and misery which all eminent writers call melancholia.

This state, which I call the primary state of the first stage, is in some individuals so short and combatted by the patient so effectually by force of will during that short period, that it remains unnoticed, unless attention to the fact is drawn, that it is always present; then the observer will note the change. Or, if already further progress of the disease has been made, many points will come back to the memory of such an observer, corroborating the existence of such a depression, and probably other points are even re-occurring, as if the disease were of a remitting character.

Let us now follow up at this, what I believe to be a rational conception of insanity, in the same rational matter-of-fact manner. How will future symptoms develop? Let us go back to ourselves again. What would we do if our ideational and intellectual faculties in search of a proper subject to work upon, find none? Of course, these faculties would make a subject. This leads us directly to hallucinations and illusions. The patient whose thoughts, by an unwavering rule, must be going on, takes hold of a non-existing impression, created, instead of through afferent nerves, by outward circumstances, now by the ideal and intellectual centres transmitted by connecting nerve fibres to the emotional sensorium, and acts, thinks, and does things accordingly, *i. e.*, incorrectly. Constant repetitions of such self-created emotions banishes them from the centre of "force of will," and is unable to control them. Here lies the second misery of the insane, to know that you are acting, thinking, and doing wrong, still you can not help it.

Herewith, a rare case, but very illustrative; not rare, because hallucinations existed, but because they were of all the five senses. Mr. H., aged fifty, of great literary talent, prosaic and poetical, with manifest signs of a first-class education, and endowed with magnificent oratorical powers, under treatment at one of the State insane hospitals in this country, although not strictly confined, and having the privilege

of promenading outside of the hospital grounds, was afflicted as follows:

He said he heard voices and sounds that did not exist, saw persons and things not present, felt objects touching him when none were near, smelled perfumes or the opposite while a pure spring atmosphere would play around his silvery locks, and tasted cloves in his tea and assafoetida in his soup. At one time you would see him following an imaginary fellow-poet with threatening exclamations and wild looks, far into the mountains; at other times, answering questions and holding angry conversations with phantom individuals through the windows, or suddenly stopping in the hall, turn around to some non-passing individual of his own creation, violently saying, "What did you remark, sir?" or, "What did you touch me for?" Occasionally he would get up from the tea-table, take his cup to the nurse or attendant, and respectfully suggest to him that he made a mistake and poured soap-suds instead of coffee into the cup, while at times he might ask of those around him to give him an orange, insisting upon smelling them or any other flavor that might excite his nasal organs, although nothing of the sort was near. When Mr. H. was told in private, and in a courteous manner, that he was mistaken, he would say, "Confound it, I know it now, but could not help it before." He was then rapidly advancing into a state of dementia.

The one and essential character of melancholia is the feeling of oppression of one's self, the egotistical stand-point of "I am" is lost, out of which arises the delusion (if it be such) of being overpowered by some strange influence, loss of emotional power, which, in its turn, gives rise to imaginary powerful agencies, as demons, villains, and other phantoms, having control of the patient, or taking a religious turn, that his or her salvation is lost, etc., etc.

Hence, from these varied mental pains and sufferings, come these diversified forms and legions of symptoms of melancholia.

But this is only a general answer to the question of varieties of insanity. Why is it, we must scientifically ask, that every insane person has, so to speak, chalked out for him or herself a certain course of wrong acting, thinking and doing? Or, in our own way of reasoning, by what has been said, why do the ideal and intellectual functions of the insane, not finding occupation or right of cause for their activity, select the one or the other of that emotional food to work upon, so that the result, the wrong acting and thinking, is not alike in any two patients? Again, I must ask you to remember that we must philosophize and argue upon the functions of the various higher nerve centres, the brain, as upon the functions of any other organ of the body.

The vegetative and animal functions are governed alike by the same life force.

Suppose three men go fishing—the one during his previous course of life has been liable to thoracic irritations, coughs, etc.; the other has a weak alimentary canal, and the third a diathesis for rheumatism. The boat upsets and all three get wet. Next day No. 1 has signs of pneumonia, No. 2 of colic and diarrhœa, No. 3 suffers from pains in various parts of his body. *One cause! Three effects!!* But all of them are fearfully frightened, and this sudden shock upon their nervous system overbalances their emotional receptivity, and, aided by their existing physical ailments, they become insane. Now, it happened that previous to their going fishing, the first, who was a good christian, but often doubtful of the right way or course of his faith and belief, devoted much time to religious researches and dogmas. The second, a successful merchant, having during all his life been bent upon riches and possessions, finds himself a rival of the wealthiest men of the land. The third, an ordinary character, but of contradictory nature, could never assent in his own mind to an argument, nor find things done by others satisfactory to himself, although his standing in society and good breeding

forbade his being an open-faced wrangler. Sometime after the fishing excursion we find the three men in the asylum. Man No. 1 sitting in a corner, with a sorrowful countenance, vacant stare, an expression of hopelessness, bible in hand, speaking but little, eating less, and when coaxed to say something, only replying, "Oh, it is all of no use; I wish I were dead; I can't get well; I am lost," and the like. He is, also, haggard and thin, suffering from night sweats and a deep cough, with purulent expectorations.

No. 2, stick in hand, paces the hall with a majestic gait and commanding air, believes the hospital to be his own, orders the nurses and patients around as if they were his servants, relates to every incomer the extent of his lands and ships, and can not see why he is detained here instead of being allowed to look after his interests and domains. In habits he is, however, neglectful, even filthy, and at night relieves himself wherever he lies of his uncontrollable chronic diarrhœa. No. 3, in bed, ill tempered, constantly scolding, disagreeable to extremes, dangerous even when approached, would do mischief to others if muscular atrophy or paralysis did not retain him in bed. His desires are frequent, but for no particular object; incoherent arguments follow one after another without any basis for them; loss of memory, particularly in regard to time; imbecile on subjects of the simplest kind. The first is in the first stage of insanity bordering on the second, the other man a maniac, and the last patient rapidly sinking into dementia: again, *one cause, three effects*.

We have now sufficiently argued the manner of development of melancholia and of its varied characters. Nevertheless, it is well to state a few of the characteristic symptoms which occur more or less at first in all cases of melancholia. By the patient's perverted feeling of external events he not only feels himself to be unnaturally changed, but also acts as if everybody was gazing upon him for such unnatural action;

therefore, the patient either refuses to see relatives and friends, or looks upon their visits with sorrow and suspicion. He not only sits isolated, but feels so; nothing has any interest for him, not even his own affairs. His agony is usually expressed only in occasional sighs, provided some one is near, but occasionally also by violent cries of anguish. When alone, the patient manifests his sorrow only to himself. It is rare that desperately violent acts of despair are committed except in a moment of convulsive and strange impulse. The longer the patient manifests these symptoms, the more do they intensify his misery, until he finally succumbs to his affliction. The general feeling of distress leaves him now, and this is the beginning of the formation of a definite concrete *delusive* idea. In other words, the character of melancholia now expresses itself, or better, we may express it so, the chaotic feeling of misery becomes systematized, and the patient enters upon a new battle-field with a plan of new and regular tactics. With this the physical symptoms, which in the early stage were indefinite and more or less in accordance with the patient's previous health, assume now a more definite aspect, pertaining rather to, or being inherent of, that part of insanity.

(1) Dreams.—These have existed from the beginning of the disease, but are different in character as the stages of melancholia themselves. In the beginning, the patient is constantly haunted with terrible and intensely agonizing dreams, which actually make him afraid to go asleep for fear of their repetition, while in the more settled state these dreams partake more of the systematic order of that stage. (2) Insomnia, not only a natural consequence of the dreams, but also a result of the changed circulation and unnatural nervous exaltability. (3) Digestion is nearly always out of order, mainly due to a deficient action of the liver. That organ does not seem to secrete the necessary quantity of bile, as is shown by the customary costiveness and the clay-

colored appearance of the alvine discharges. The appearance of the tongue is unnaturally loaded, thick, red, and difficult to scrape the coat off. Some times, however, the tongue is just the opposite, flabby, pale, and indented. A peculiar feeling of distress, tenderness, and fullness is experienced by the patient in the epigastrium. (5) Circulation. The heart is subject to palpitations and throbbings. The pulse accelerated at the beginning of melancholy, but soon normal in frequency, and the swell of the pulse-wave slow, the vessels very compressible. (6) Frequent headaches, often accompanied by (7) giddiness. (8) Urine, either very pale or very high-colored; in the latter case, accompanied by a deposit of lithates. (9) Skin almost always moist, but cold, clammy, or greasy. (10) Blood. On account of the patient's refusal of food, of carelessness to provide against hygienic irregularities, disposition to stand erect all day on one spot, often at the window, of impaired digestion, and, lastly, on account of the asthenic diseases so often accompanying and complicated with melancholia, the state of the blood is poor, watery, and deficient in red corpuscles. (11) Catamenial discharges, often irregular or altogether wanting; also, sometimes *fluor albus*. (12) Phthisis pulmonalis is of frequent occurrence among the melancholic insane. Whether melancholia predisposes to the development of tubercles, or whether phthisical persons are more liable to insanity, is as yet an unsettled question.

Although we have observed before that there are many varieties of melancholia as there are cases, still some of the varieties have more or less similarity and are of more frequent appearance, to justify authors to make special observations in regard to them.

Among females, particularly, it occurs that the subject of their intellectual wrong is religion or religious duty. They search religious works, and read constantly the Bible, not to learn, but to find passages to suit their own case. It

is curious that they always believe to be, or want to impress upon others that they would be damned; that for them there is no salvation; that they have sinned against the Holy Ghost. One would think that these constant apprehensions of damnation would induce a fear of death. On the contrary, such insane have decided suicidal propensities.

Nostalgia is a well recognized form of disease, and has attracted considerable attention, especially from writers on military hygiene, as it occurs so commonly among soldiers. It has been defined as a form of melancholia which attacks persons when separated from their native land and from their friends, as a melancholy produced by the irresistible and constant desire to return to it. Larrey, Surgeon-in-Chief to Napoleon Buonaparte during two campaigns, expressed the opinion that the mental faculties in nostalgic patients are the first to undergo a change. Unquestionable aberration of mind was present in the cases recorded. This was induced by the great exaltation of the imagination. The prospect of their native home presented itself to their mind's eye like the "Fata Morgana" to travelers in the desert, depicted in the most extravagant and delusive hues which a morbid fancy could suggest. All this is often in the most violent contrast to the rude, uncivilized, and poverty stricken home which their better reason might suggest as sober reality. Another says, regarding the nostalgic patient, imagination pictures to him the events which are there (at home) transpiring. At night he dreams of them, awaking in the morning to pass another weary day in pining for the companionship of those he loves, and for the scenes amid which he was born. The continuation of such emotions eventually produces a diseased condition of the mind, and, by sympathy, disorders of the functional operations of the organism. Pinel regards nostalgia as a form of melancholia, and Bucknell and Tuke say it may some times be a variety of simple melancholia. Feuchtersleben asserts that nostal-

gia exists without alienation of the personality. It can only pass into insanity when in its higher degree and after a long duration, and then it represents a "melancholy with a fixed idea of domestic happiness."

The physical symptoms of the disease are those common to melancholia. There is often increased heat of the head, redness of the conjunctiva, great palor and melancholic appearance of the countenance, acceleration and feebleness of pulse, also often palpitation of the heart, produced by the slightest emotion. There is usually loss of sleep and appetite, and the secretions are diminished, the urine scanty, the bowels constipated, and the exhalations from the skin and the breath offensive. The patient moans, sighs, cries, and wrings the hands. Food is often obstinately refused, and there is rapid wasting of muscular tissue and emaciation. The susceptibility of the nervous system to ordinary impressions is greatly diminished. There may be marked depressing delusions, or, without these, "all things, present and future, are to his view involved in dreary and hopeless gloom."

Frequently suicidal tendencies are developed, and the patient may at length put an end at once to his misery and his life. We will not attempt a fuller description of this state, for, as quaint old Burton remarks: "I need not be so barbarous, inhuman, curious, or cruel for this purpose as to torture any poor, melancholy man; their symptoms are so plain, obvious, and familiar; there needs no such accurate observation or far-fetched object; they delineate themselves; they voluntarily betray themselves; they are too frequent in all places; I meet them still as I go; they can not conceal it; their grievances are too well known; I need not seek far to describe them."

The military surgeons who have written upon the subject, and detailed their own experience, have said that those who inhabit cold, moist, and mountainous countries are

most liable to the moral impressions which are the origin of nostalgia. The cases of the Swiss and Scotch Highlanders, who, when separated from home and friends, are so easily affected by hearing the national airs that it has been found necessary to prohibit their use by the bands of the army in which they served, have often been quoted. The Laplanders and the Greenlanders are said to mourn for their cold and barren homes, and to run the risk of even losing life itself to regain their rigorous climate. In the French army, on the contrary, those from the level country, who served in the mountainous regions, suffered much from nostalgia. The Dutch have also been quoted as being readily afflicted with the same disease. In our late war the surgeons of the army reported numerous cases of the same character occurring among all nationalities. In the medical and surgical history of the war of the Rebellion, from May, 1861, to July, 1866, there were, among the white troops, 5,213 cases of nostalgia and 58 deaths, or one case to every 1,117 under treatment in the hospitals. It has been frequently said that the negro race was little subject to this form of disease. The statistics among the colored troops from July, 1861, to July, 1866, give 334 cases of nostalgia and 16 deaths, or one case to every 1,884 under treatment in the hospitals. This gives a comparative ratio of 1.60 cases of nostalgia among the white troops to 100 among the colored. This ratio might be further reduced if we could make allowance for the number of the colored troops who had a large proportion of white blood in their veins. Among the patients in the hospitals, climate does not seem to have such an overbalancing influence as has been attributed to it by many writers. There are other influences which seem more potent. Larrey and others have noticed that a defeat of the army largely increased the cases of nostalgia and the severity of the disease, while successes and victories had the opposite effect. The depressing influences of captivity can not be better illus-

trated than in the case of the Children of Israel, as depicted by the psalmist in the 137th psalm—"By the rivers of Babylon," etc.

Another marked feature of the disease is found in the fact that inhabitants of cities do not suffer from nostalgia equally with those from the rural districts. This is easily understood. They have mingled with a great variety of individuals, and having seen more of the world outside of their comparatively narrow sphere, they have broader and more expansive views of life. They have made themselves more familiar with other countries by their intercourse with those who have visited them. Accustomed to see strangers and strange sights, when viewed in a foreign land they do not produce the mental weariness and the contrast with familiar scenes as when first looked at by the person who has seen but the valleys and hills of his native town. As a writer has expressed it, the inhabitants of great cities, and the young soldier taken from the capital, rarely experience nostalgia.

Other things being equal, however, the young are more liable to suffer from the disease than those of mature life. This is largely due to the spirit of dependence which is fostered by the kindly influences of home and friends from whom they are not accustomed to be separated. Women are said to be less subject to the disease than men. This, however, has but the semblance of truth, as they change their positions less generally than men, and accustom themselves to less varied and less different modes of life than men.

Misfortunes, privations, and the want of occupation are the frequent and efficient factors in the production of nostalgia.

We have thus spoken at some length of this disease, as it is so prominent an element in the production of melancholia, which is the most common form of mental disorder among the patients in the emigrant asylum.

The general fact, ascertained by the experience of others, are found to apply, with nearly equal force, to the emigrant population. As before intimated, however, climate and country are not found to exercise the greatest influence. All nationalities, all countries and climates, have here their representatives in a ratio mostly in proportion to the number of emigrants from each. They came from the warm and the cold, the moist and the dry climate, from the level and fertile plain, and from the mountains, and from the barren soil. The rural districts, where the population is spare, and the small hamlets furnish the greater proportionate number of patients than the larger villages and cities.

The age of the patient corresponds closely with the average of the emigrant population, which is rather below than above the prime of life.

In regard to the sexes, there is a better opportunity of judging of the effects of influences which conduce to nostalgia, and through it to melancholia, than has ever before been presented, as all conclusions have been drawn from a small number, and from insufficient data.

Many patients afflicted with melancholia not only have a decided aversion to food, but actually refuse to partake of any, giving various reasons for it, such as that they are not deserving of it, or that the food is believed to be poisoned, so that the doctor is sometimes forced to eat from the same plate and morsel of the patient, or that they find some other excuse, such as that they cannot eat, etc. I believe all these cases to be due to a false mental interpretation of a physical derangement of some of the digestive organs. A large majority of these refusers of food are, however, very glad to get something to eat, provided they could get it and eat it without being seen. In all such cases, that opportunity must be given to them. You must cause a meal to be placed in some room of another patient, but in view of the non-eater, where the latter is able to steal, and clandestinely devour it with-

out being noticed by any one. The best time for such a trap is when the patient is out of the ward either carriage-riding, walking, working, at an entertainment, in the chapel, or elsewhere. This should be done regularly, at stated hours. If kind words and deception fail, we must resort to forcible means, the disagreeable nature of which, after several repetitions, frequently induce the patients to partake of food voluntarily, although they insist upon only doing it *because they must*. The means of forcible introduction of food usually resorted to, are the œsophagæal tube, with a funnel at one end, or the stomach pump. I think there is no need of these. I have never failed to be able to give patients *as much as I wanted them to take* of liquid and semi-liquid food, such as beef tea, milk punch, very soft eggs, thin gruel, etc., in the following manner: Place the patient in a horizontal position, if practicable, on the floor, otherwise in bed, kneel at his head, place the latter and hold it forcibly and steadily, face squarely upward, between your knees, insert the fore and middle finger of each hand between the teeth and cheeks, stretch them outward and upward to form a hollow, press both thumbs against the nostrils to prevent breathing there; get a second person to hold down the patient's hands and arms, while a third, with a pitcher having a small nozzle, pours into the mouth the liquid, which will pass between the interstices of the teeth, and particularly behind the last molars into the fauces, where, when arriving at the third portion, involuntary deglutition taking place, the patient will soon be obliged to take one swallow. If you keep the cavity of the mouth filled, he can take no breath without keeping on swallowing, and you can administer, in that manner, a whole pint at a time, before giving the patient a chance to breathe. This method is simple, does away with the horrid exposure of tubes, pumps, basins, etc., and has the advantage of being equally as disagreeable to the patient as any other, without risk of injuring a probably inflamed or otherwise diseased stomach, and without giving pain.

Sometimes the morbid fears or apprehensions of melancholic patients are in the direction of their own state of health, and although these apprehensions are expressed in exaggerated forms and ridiculous suppositions, as well as erroneous conclusions, still are they, to some extent at least, based upon a disturbed organ of the body. By listening, therefore, with due allowance, to the patient's abnormal statements, some good inference in regard to the patient's bodily ailments may sometimes be drawn. For instance: I know of a case where an elderly lady pertinaciously insisted on having accidentally put a thimble up the mouth of her uterus, which she could not get out again, which brought to light that she had a cancerous tumor there, of which she subsequently died, although discharged from the asylum mentally well.

Hypochondriasis is not in itself insanity, but is merely often found combined with and actually the principal symptom of it. If a hypochondriac is *not* insane he has mental depressions, which, although coherent in ideas of cause and locality, are often so strong as to place him or her in close alliance to a case of hypochondriacal melancholia. The only distinctive diagnostic point would be the manner and quaintness with which the patient insists upon his ailments. Among the insane or the melancholic the very frequent complaints of ailments of so many different parts of the organism, or the ridiculous declarations of impossible facts, immediately stamp the case as belonging to insanity.

For better comprehension and diagnosis let us adopt Dr. Tuke's modification of Dubois' arrangement of this subject in regard to symptoms:

1. Concentration of all the patient's attention upon his own maladies. Mental disturbances excited by most trifling sensations.

2. Anxiety of mind, increased and constant fear of death harasses the patient. If the digestive organs are more par-

ticularly the seat of complaint, he suffers from gastralgia, constipation, dyspepsia, etc.; if the organs of circulation, palpitations, dyspnœa, throbbing of the arteries; if the sensations are general, inertia, languor, sweats, and flying pains; often, also, the patient has special delusions and illusions respecting his physical condition.

3. Aggravation of all the symptoms, chronic inflammations of all the viscera and structural changes, especially of the digestive system. Next in frequency are affections of the thoracic organs. Symptoms sufficiently decided to make it certain that there are serious organic lesions.

Trials have been made to lead the patient's mind off from the fantastical, erroneous fixed ideas and thereby effect a cure, but I doubt if this mode has ever been successful. I know of a case where an old lady firmly believed she had snakes in her stomach. To lead her to believe that they could be easily removed, two small snakes were caught alive, placed in a common earthen spittoon, emetic was given and the lady made to vomit copiously into the spittoon. The lid being taken off the two snakes were shown to her. The ruse helped for about two weeks, when she said it was a pity the snakes were not taken away sooner, for she felt that they must have left their eggs and that her stomach was full of young snakes. A year afterwards she died with a good-sized tumor in her stomach. Almost all the remarks made on hypochondriacal melancholia hold good for hysterical, only that other organs of the body are pathologically affected, beside, occasionally, those mentioned, but here, too, it is difficult to decide between hysteria with and hysteria without insanity. Here, too, we find perverted emotional excitement, only slightly varying from hypochondriasis, the patient asserts she can not control her thoughts and expressions, movements, etc.; insists sometimes that she can not move this or that member of the body, can not walk, open her hands, etc. These things are generally due to an influence from the higher or mental nerve

centres, for we often can make patients do the very thing she asserts she can not, by arousing the contrariness of spirit which is so often combined with this disease. For instance, a woman lying on the floor and insisting that she is unable to get up, can be made to rise by tantalizing her that her blind which she always wants down is now up. Let her a moment alone and she will get up and let the blind down. Such freaks often occur. I will not enter into a description of hysteria now, as I intend to devote a special hour to its causes, symptoms, diagnosis, etc., but only ask your attention, that the continual exaltation of sensibility leads them to uncontrollable irritability, ugliness of temper, pertinacity of doing things out of order, that the sensational soon gets the best of the intellectual centre, and the first step of insanity, melancholia in its various forms, is the result, often progressing to mania and dementia. The prognosis is generally favorable.

So far I have endeavored to give you hints on a few forms of melancholia where prominent marks and frequent occurrences justify, not a classification, but a special mention. Now I will draw your attention to two directly opposite manifestations of melancholia, the one where the reflex influence of emotions on the motor functions is that of activity, the other where a torpidity of the muscular system is prevalent. The patients of the former are really pitiable. Their morbid thoughts, mostly on religious subjects or due to domestic grief, are, or at least seem to be, of such a torturing character as to give no rest. The common expression of life so often used, "The thoughts will drive me mad," seems to have become, in such cases, a stern reality. They either walk up and down the hall with fleet steps, as if they had hurriedly to execute some important order, upon which life and death depended, or they run down the room, but arriving at the door remember that they can not go out, and run back again only to commence the errand again. These

tramps continue a long time, even at night, in their rooms, causing sleeplessness and great exhaustion. Others, again, keep their hands active, pick up things continually and lay them down again, change pictures on the wall, from one place to another, as they appear to bring about unpleasant recollections, or are always opening all the windows of the room and then shutting them again. Cases again occur where patients confine their emotions to a small space, generally a corner of a room or a small chamber; they walk up and down, to and fro, like a wild beast of a menagerie in its cage, wringing the hands, with constant wailing, exclamations, and expressions of anguish and despair. Day and night they are in this state of excitement about themselves, muttering and crying, but still walking constantly, repeating the same sentences; occasionally we find cases of great depression accompanied with actual chorea of the worst form. Such continually active patients in course of time become exhausted, so much so, that life is endangered during the period of nature's forced rest. But this period is also the most favorable for convalescence, and is therefore looked upon in anticipation by the physician with more than ordinary interest and anxiety. Again, another class of melancholics demonstrate their restlessness by wandering from one house to another, from one friend or relative to another, and even from one town to another. They have no rest at home, and having mostly an idea of poverty, or that they can not support their family, they wander about either relating their afflictions to others, or else to make some speculation to get out of supposed financial trouble. One case of striking illustration: A middle-aged man, confined in an asylum for being constantly in trouble about supporting his family, although well to do in life; and for beginning to indulge in wild speculations to retrieve supposed losses, made his escape from the asylum, borrowed a considerable amount of money from a friend who knew nothing about his confine-

ment as a lunatic, went to Washington City, bought up a number of old schooners, which were sold at auction by the Government after the war, resold the vessels at a profit of over five hundred dollars, returned to the asylum, but still complaining that he had no money to give bread to his children, for with the five hundred dollars he said he must pay a debt. The loan he contracted from his friend he paid back faithfully on his way home.

Melancholy, with muscular torpidity, are cases which, at first sight, completely resemble dementia, and often can only be distinguished by their recovery, which frequently occurs. Such a patient cuts a figure or caricature of complete laziness, for such is the appearance of that class that not only the lethargy of all muscles of usual activity is complete, but even those of facial expression, giving an extreme look of stupidity; and, as he is difficult to arouse from this state, nothing seems to attract his attention so as to alter his position, which, standing or sitting, is motionless. He sits like a drunken man in a stupor, allowing every part of his body to hang and dangle, no matter how inconvenient the position may be. Wherever or however he is left or put, so he remains, takes no care whatever of himself, passes his dejections as he is, makes no effort to eat, drink, or do anything for his comfort. This hanging of all muscles has the effect of a slow circulation and of puffing up the hanging parts, disfiguring the face and giving it a purplish color, swollen feet and hands, almost cedematous, harsh, dry skin, all of which anything but improves the patient's general appearance. Even when walking, he or she will go straight ahead, and when coming to an obstruction, stand still till the obstruction is removed, or he by others turned to change direction—in fact, appearing like an automaton. There is, seemingly, a complete bodily and mental annihilation.

Now, it is curious that when such patients get well, they do so rather suddenly; they remember distinctly all that has

passed, and regain quickly their normal mental force and intelligence, as if they had never lost it. Some cases are much milder in form and symptoms, manifesting principally a sluggishness and want of pliancy. In still milder cases there is only a tardiness and reluctance to move, speak, or answer questions. Cases of long-lasting, complete taciturnity are also occasionally occurring.

It is difficult to make out a boundary line between melancholia and mania, as this transition state is mostly a sort of mixture, although frequent cases occur where a melancholic patient suddenly becomes violent. It is most generally noticed by the patient asserting his illusions with more force, he looks with anger at the non-believer and gradually acts with violence, as if he would want to insinuate that *there is enough of this now*.

From what you have now heard, a diagnosis is not difficult, nearly all cases being self-evident. One warning only: where a suicidal or homicidal tendency exists, or where the patient is very anxious to be set free, they some times, and particularly during the first or second week of their detention, pretend to be, and act by main force of will, as if they were well, in order to obtain their object. The more a patient assures you suddenly that there is nothing more the matter with him, the more certain it is that there is no improvement. A patient really getting better appreciates his situation thankfully, and is willing to remain till discharged, while a fraud is unthankful, and believes inwardly that he is detained for insufficient cause.

Melancholia is the most favorable of all states and stages of insanity. A large majority get well. The mortality is between six and seven per cent. of those admitted into an asylum.

CLINICAL RECORDS.

ART. VII.—*A case of Ligation of the Brachial Artery, for Injury.* By H. G. LANDIS, M.D. (and A. J. LEITCH, M.D.), of Niles, Ohio.

Owen Riley, æt. 30, laborer, 9 A.M. of May 6, 1874, was working at the shears in a rolling-mill, when a flaw in one of the steel blades separated, and a piece of steel was detached with astonishing velocity, striking him in the right arm. The piece was prism-shaped, and very sharp at both the edges and ends. It was two inches long, and weighed three-quarters of an ounce avoirdupois. It entered the arm at the center of the biceps, and was deflected by the bone inwards and downwards to the depth of three and a half inches, wounding the brachial artery, basilic vein, and, as subsequently appeared, median nerve. Hemorrhage was profuse, and yet he started to walk to the office, distant a quarter of a mile from the mill, his track being marked by a continuous jet of blood. He had to be assisted during the last few rods, and arrived at our office in a fainting condition. Pressure on the axillary artery at once restrained the hemorrhage, which started afresh if the pressure was relaxed. The finger used as a probe discovered the fragment of steel, which was easily removed by the dressing forceps. A tourniquet was then applied for additional security, and the brachial artery exposed at the junction of the upper and middle thirds. The artery on exposure behaved as usual, contracting, and even when the pressure was removed, remaining pulseless for some time. The pulsation soon returned, and the artery was tied, completely stopping the flow of blood. The incision for ligation was united by suture, and the original wound covered with cotton batting, the arm being then bandaged. Mor-

phiae sulph. was given to the extent of securing rest and freedom from pain. By 3 P.M. his condition was good. Pulse 54, no pain.

May 7—9 A.M. No subsequent hemorrhage. The cotton dressing has dried, and with the blood, forms an air tight seal. Pulse still 54, and very slight pulse in the radial of the right arm. No alvine evacuation for two days, and tongue considerably coated. Ordered calomel gr. v., to be followed by a cathartic pill every three hours until they operate.

May 8—9 A.M. Pulse 58. Arm looks well, although the cephalic vein is prominent and somewhat tense. Pulsation in the right radial artery is much more distinct. The cotton dressing being unchanged was still undisturbed. Some griping, but bowels still unmoved.

May 9—6 A.M. Bowels unmoved. Gave ol. rieini 3ss. and three small enemata of tepid water during the night. Administered a larger one without effect. In fifteen minutes gave another enema of soapy water Ojss., to which was added camphor gr. vi. Two small seybalæ then passed and much wind, greatly to his relief. Gave then Epsom salts 3iij, and at 11 a. m. an enema of turpentine and linseed oil, which was followed by a copious stool. In spite of this his pulse was but 70. Arm looks well; incision over brachial healing kindly. Removed sutures; wound made by steel completely filled up by granulations. No pus as yet. The only application so far has been a one per cent. solution of carbolic acid, with which the arm has been kept moist. From this time his convalescence was uninterrupted and rapid. The ligature came away on May 21st, and he walked to the office on the 22d. The wounds were then dressed with carbolated oxide of zinc ointment, and were completely healed by June 17th, 1874. The restoration of power to the muscles and of sensation was aided by a single application of a mild induced faradaic current, which was followed by immediate improvement. In a few weeks he seemed to lose power. Whether

this was due to the near approach to trial of his suit for damages against the mill owners or to the development of a neuromatous tumor I am in some doubt. The latter, however, did arise at the point of injury to the nerve by the piece of steel. It was painful, sensitive to touch, and speedily attained the size of a small marble, at which point it has steadily remained. The loss of power is much less than formerly, but the parts supplied by the median nerve are still impaired in function, and some atrophy exists, notably of the thenar eminence. In placing the case on record, I am tempted to call attention to the fact that a punctured, lacerated wound, fully three and a half inches deep, was completely closed by the third day, so as to present to the eye the appearance of a mere superficial ulcer, and that very little pus was formed at any time. This I attribute largely to the dressing. The cotton batting applied to the wound forms with the blood an almost hermetical seal. If this is left undisturbed until pus is present, the wound is kept from the air, and placed in the best possible condition for reparation. Lint answers the same purpose.

ART. VIII—*Case of Perityphlitis, Embolism of Left Anterior Tibial Artery, Gangrene, Amputation, Recovery.* By A. SCHEIBENZUBER, M.D., of Dayton, Ohio.

M. W., æt. thirty-five; a robust looking, fat woman; single; always enjoyed good health; menstrual function normally performed.

She was taken sick on December 17, 1876, with symptoms of inflammation of the bowels.

I first saw her on December 18th; found tympanitis, pain in the right iliac fossa, corresponding to dullness over the cæcum, reaching up to the umbilicus.

Temperature 102°, pulse 120°; somewhat delirious, with general prostration. Diagnosis, perityphlitis.

Prescribed quinia, *Ol. ricini*, cold applications; later, quiniæ and opium, externally applications of hot water.

December 25. Numbness of both legs; exudation diminished.

December 27. Several patches of a brown color, and about the size of a nickel five-cent piece, made their appearance on the right leg. These disappeared in a few days, but the left leg became discolored, below the middle, and was insensible to the touch; it was hard, and to the patient's sensation burning hot, like fire. Diagnosis, dry gangrene.

January 30, 1877. The line of demarkation being fully developed, amputation was performed in the upper third of the leg, near the knee, viz.: the single flap operation, under the influence of alcohol, chloroform, and ether, in proportions of 1, 2, 3.

The arteries were found unusually small. Wound united with thirteen points of suture; dressed with diluted carbolic acid, cotton, and bandage.

The dissection of the leg showed an embolism in the anterior tibial artery, below which the leg was mummified.

The lower part of the skin flaps sloughed, but still enough was left to cover the stump. In sixteen days the ligature came away, the upper angle of the wound healing by first intention.

At the end of the third week the stump was healed, except one inch in the center, over the tibia.

Union entire and firm by the sixth week.

The exudation produced a thrombus in the vena hypogastrica dextra, which, fortunately for the life of the patient, passed the aorta, and obstructed the arteria tibialis antica of the left side, only small particles going to the right side, which were subsequently absorbed.

March 26. Patient at her house-work; has menstruated once since her illness.

CORRESPONDENCE.

162 W. THIRTY-FOURTH STREET,
NEW YORK, March 24, 1877.

Prof. J. H. Pooley, M. D., Editor Ohio Medical and Surgical Journal:

DEAR DOCTOR: Nearly two and a half years ago, when I took leave of my professional friends in Vienna, Austria, one of them, a most excellent gynecologist and lecturer at that University, remarked to me: "I wish, Doctor, I were in your place; how gladly would I exchange my station in life with yours, if that were possible, simply for the reason that you will soon have an opportunity of studying gynecological operative surgery under the great masters of the New York Women's Hospital." At that time I had never visited that hospital, and I did not understand why my friend, Dr. Wilhelm Schlesinger, Jr., was so desirous of having an opportunity of studying, at the fountain head, the performance of those difficult operations which any surgeon, who has attempted them, knows how very inaccessible the internal organs of generation in the female are, without the introduction and aid of Sims's ingenious specula. For the past year or two, however, since I have witnessed the great skill displayed by the eminent surgeons of the Women's Hospital—Peaslee, Emmett, Thomas—I can fully understand why my friend, Dr. S., candidly expressed his great admiration for our New York gynecological operators. The extensive lacerations, often with partial destruction and contraction of newly formed connective tissue of the cervix uteri, the vesico-vaginal and vagino-rectal fistulæ, or of the external organs, the vulva; the lacerations of the perineum, sometimes including the external sphincter ani, are managed and cured here by the surgeons named, in a man-

ner that may be called perfect. Dr. Emmett sews up these breaches of continuity, with the same ease as an accomplished seamstress does up an ordinary shirt sleeve. A visit to the New York Women's Hospital, and the witnessing of the operations performed by the surgeons named, will convince any one, if compared with similar institutions abroad, of the superiority of American gynæcological surgery.

Dr. Bozeman, of this city, who has been traveling in Europe for several years, has operated there in the presence of the most distinguished surgeons, at their clinics, with remarkable success.

Dr. Bandl, first assistant to Professor Braun, in Vienna, has published in the Vienna medical journals a series of articles on Dr. Bozeman's successful operations in Vienna, performed in the Professor's clinic, and thus attested to the correctness of the high esteem of our surgeons expressed to me by Dr. Schlesinger. You also know, Mr. Editor, that Dr. Thomas's book on the diseases of women has been translated into the German language in Berlin, and that of Dr. Sims by Dr. Baugel, of Vienna. While heretofore we were in the habit of translating foreign works into our language, Europe is reaping the benefit of getting in exchange the brain-work of our own eminent writers.

While I often admired the operations of Dr. Emmett at the Women's Hospital, I heard him say, in the winter especially, that it was getting dark, and he could not operate after sundown. It occurred to me that this defect might be easily remedied, and that operations can be performed at night time as well as in the brightest daylight, by the aid of the laryngeal head mirror, or reflector, as it is commonly called. Any one who is in the habit of using artificial illumination, by the aid of the ophthalmoscope, the laryngoscope, the myringoscope, and the rhinoscope, could also use a vagino and a rectoscope, or endoscope. The application and the principle being the same in all these examina-

tions, no further description of my method of examining the female organs, by means of artificial light, seems to be needed. Your brother informs me that as regards the artificial illumination of the rectum, you have advocated the use of the mirror in 1872. So I shall only claim priority regarding the use of artificial light in the treatment of the diseases peculiar to women.

One week ago yesterday, the New York Hospital, situated near Fifth avenue, on Fifteenth and Sixteenth streets, in this city, was opened and inaugurated. Cards of invitation were sent to all the regular physicians in this city, by the Governors; also, to the most prominent laymen, for the occasion. Among the latter, we had with us our venerable patriarch, Peter Cooper, one of the defeated presidential candidates in our last exciting election. The venerable old gentleman, who is one of the great benefactors of those of our young students, both male and female, in this city, who lack the means of paying for instruction in the higher branches of science, has furnished, as is well known, the institute bearing his name, with all the requisites for acquiring knowledge in drawing, painting, telegraphy, the natural sciences, etc., and deserves especial mention as a visitor on the occasion above referred to. The guests, including hundreds of ladies, listened with pleasure to an address delivered by Prof. Van Buren, at Chickering Hall. The Doctor gave a complete history of the old New York Hospital, from its foundation to the present date, and eulogized, deservedly those who had devoted their services faithfully to that institution. Among others, he paid a tribute of respect to the memory of one of the surgeons of the institution who has, a short time ago, departed this life, having died of chronic nephritis.

Dr. Gurdon Buck was removed from our midst by death. The high esteem in which our lamented friend stood in the profession, is too well known to require any particular

description on my part. His loss is keenly felt, and is universally mourned. Dr. Buck ranked among the most eminent surgeons of this country.

The vacancy occurring in the Presbyterian Hospital in this city, by reason of Dr. Buck's death, has already been filled by the appointment in his place of Dr. Geo. F. Shrady, the able editor of the New York Medical Record. But to return to Dr. Van Buren's address. I was delighted to hear him pay a high tribute to Pasteur, of France, and Prof. Lister, of Edinburgh, and express his firm conviction that the time is near at hand when we will be able to exclude from our hospitals many of the so-called contagious and infectious diseases, by the use of antiseptics and disinfectants. The Doctor admitted that the pavilion plan is the best mode of constructing hospitals, when and wherever practicable, and that all convalescents should be treated in the country until full recovery had taken place. But, he said, as long as there were cities, there must be large city hospitals. You have probably read the articles of Surgeon Billings, U. S. A., in the New York Medical Record, who, after a brief visit to Europe, tells us that the so-called "germ theory of disease" is not merely a fancy, an optical delusion, a fashionable idea, like the blue glass mania, but has been carefully examined, and has stood the test of time. A description of the beauties of our New York hospital would take up more space than you could allow me in your esteemed journal for that purpose. I will, therefore, simply state that it is the most magnificent hospital in the world! It can accommodate two hundred pay and gratuitous patients, and has a library, a museum, and dispensary for the treatment of the out-door poor attached to it. Its cost is estimated at \$900,000. Nine hundred thousand dollars! The aquarium and conservatory of tropical plants connected with it, for the benefit of the patients of the hospital and visitors, are models of beauty and taste. There is one peculiarity of this institution: besides

being fire-proof, as it is claimed, which seems to me to be a capital idea, namely, the kitchen is on the top floor, and the emanations therefrom do not and can not affect the health of the inmates, as is often the case where the cooking is being done on the ground floor. Having all the so-called modern improvements as to heating, lighting, ventilation, baths, etc., and being provided with steam elevators for the transportation of persons and things from floor to floor, I do not see in what the difference consists between this elegant structure and our finest hotels in this city. I could find none. I nearly forgot to mention that another good idea put in practice at this sanitary palace is worthy of publication. The dissecting table is made of one block of glass. This I consider excellent. Marble, wooden, or metal tables can never be kept so free from putrescent material and odors peculiar to dead-houses and dissecting rooms. It is actually sickening to spend a little time even in one of our dissecting rooms in any of our three New York medical colleges. I can not understand why so little attention is paid, by those who know better, to disinfection at the very places which are the temples of the muses. If the germ theory of disease be true, as I am convinced it is, based upon facts proved beyond a shadow of doubt, and since our whole secular press in this city and the citizens generally are clamoring, and justly so, against the foul odors emanating from slaughter-houses, pork-packing, gut-cleaning, bone-crushing, sausage, and varnish-making, and fat-boiling establishments in our midst, not a word is said by our well-fed and magnificently-paid, more ornamental than useful Board of Health, against the pestilence-breeding nuisances—our college dissecting rooms! "*Quod uni justum sit alteri aequum.*" "What is good for one is good for another." What is the remedy? Use Lister's spray about your dead-houses. Use glass dissecting tables instead of those now in use, and keep disinfecting fluids for the cleansing of your hands, young students, before you go from the

dissecting room into, the wards of a hospital or back to your boarding-houses. In Vienna we used a solution of permanganate of potash, one drachm to a quart of water, and a good tooth or nail-brush for the cleansing of our hands and finger-nails. This solution, however, leaves sometimes stains on your hands. For removing these we used another disinfectant, applied after the first, namely, a drachm or two of muriatic acid to a quart or two of water. Nobody is allowed to touch a pregnant or parturient woman in Professor Späth's or Braun's clinics without having first used the disinfecting fluids named, freely. Common vinegar is another cheap and excellent disinfectant for similar purposes, and answers very well even in private practice. Before examining the genitals of a woman, let the obstetrician or gynecologist always wash his hands with vinegar! I hope the practice will prevail in all our dissecting rooms throughout the land.

Should I attempt to give you even a brief outline of the great activity displayed by our ideas-diffusing, hard-working, wide-awake medical societies, it would more than fill the pages of the whole number of your journal. That is, of course, out of the question. As your valuable paper favors neither cliques nor persons, I could not, with any propriety, claim the whole next issue for myself, for the purpose of enlightening the world with my own ideas and reports of New York medical societies. I will, therefore, only allude to some momentous questions that were brought before us in this city, recently, for discussion; and as there is probably a good deal of wisdom and science outside of Manhattan Island, too, we might be enlightened by some of our distant friends on disputed and unsettled medical questions. We had quite a time of it here about deciding whether croup and diphtheria are denominations of one and the same disease, as claimed by Dr. Stoerk, of Vienna, in Billroth and Pitha's celebrated work on surgery, and others, or whether these are distinct affections, requiring different modes of treatment, which, after all, interests us most as practitioners.

I have ventured, at a recent meeting of the New York Academy of Medicine, to express my firm conviction from a careful clinical and histological study of the subject, that the two diseases are essentially different. My remarks were recently published in the Cincinnati Clinic, and a few notes on diphtheria made by me were communicated to the profession in the May, August, and November numbers of last year, in the New York Physician and Pharmacist. I shall, therefore, not repeat what I have said there. The propriety of performing tracheotomy in croup and diphtheria, when suffocation is imminent, was ably brought before our Academy by Dr. Charles C. Leale, who illustrated by the recovery of some of his patients, upon whom he performed tracheotomy, where the membranes extended into the bronchial tubes; that that was no contra-indication to that formidable operation. Without it the patient will surely die; with it he may recover. Give him a chance for life in such cases!

I will close this somewhat incongruous, hastily written epistle, by simply alluding to the interesting meeting held a few days ago at the residence of one of the attending surgeons of the New York Women's Hospital, Dr. Charles C. Lee, by the New York Obstetrical Society. I had the pleasure of being present by invitation on the part of the amiable host, who, by the by, entertained us most magnificently at his elegant residence on Madison avenue, near Thirtieth street, and spread before us a table laden with all the delicacies of the season. Dr. S. Keene, of Brooklyn, Long Island, read the paper of the evening, on "Whether a foetus born with symptoms of uræmia derived the poison, retained and circulating in its blood, in an abnormal quantity, from its uræmic mother, or whether uræmia was present in consequence of a nephritis existing in the child at its birth, the mother being in good health?" The doctor quoted authorities in support of his views that if the mother be affected with

albuminuria and uræmic poison, the same poison must necessarily circulate in the placenta and the foetal circulation, in the same manner as the syphilitic or tuberculous blood of the mother will cause the same disease in her newly-born offspring. This question is an important one for our guidance in administering opiates; for instance, to a pregnant or parturient woman, many investigators have arrived at different results, so that the question is considered an open one. Such was the opinion of Drs. Peaslee, Jacobi, Hunter, and fifty others who were present. Dr. Jacobi stated that Beneke has shown if the mother took salicylic acid it was found in forty seconds in her milk. Iodide of potash, if taken, is found after the lapse of several days only. We know very little about the effects of medicine, if administered to the mother, upon the foetus in utero, or upon the milk of a nursing woman. Here is a hint to some of your students for elaborating this subject by experiment upon animals. Dr. Peaslee showed the Society, on the same occasion, a quantity of ribbon-like membranes, which were passed for some time by a lady patient of his, without affecting her health to any degree, and he asked whether any present had seen any thing similar before. Dr. Jacobi had seen six such cases, and Dr. Blake two; no evil results followed. Such discharges occurred in colitis, and consisted of mucus, mucin threads and entangled layers of epithelia, a sort of dysentery without bloody discharges. The rarity of the disease must be my excuse for communicating it. Dr. H. Knapp read a paper before the Academy on two hundred cataract operations performed by him in this country, and three hundred more in Heidelberg. Your brother should give you an extract of the paper, as he is associated with Dr. Knapp.

Respectfully and truly yours,

DR. RUDOLF TAUSZKY.

VIENNA, AUSTRIA, February, 1877.

DEAR DOCTOR: In mentioning the eminent medical men of Vienna, Hyrtl has so recently left us that he is still to be counted among them. For over forty years this celebrated anatomist was an active teacher of his science. Ten years of this time were spent as demonstrator at the university of Prague, and the balance of the time as professor of anatomy at the university of this city. It is but two years since he resigned his professorship, and he is now living at Petersdorf, a village just outside of Vienna, where he is still prosecuting his favorite studies.

Hyrtl was perhaps the most popular professor among the students, the number inscribed for his lectures being fully three hundred and fifty, as I am very positively assured by one of his former students. There were more than his lecture-room could accommodate. His popularity was not confined to the medical world alone, for the average Viennese burgher talks of Hyrtl and tells anecdotes concerning him with as much gusto as the medical man. Hyrtl's lectures are said to have abounded with that biting humor and satire which he displays so well in his text-book of anatomy. Like other great men he had his singularities which have given rise to so many little anecdotes. Permit me to tell one as it also brings up the feuds and quarrels he was continually having with his colleagues, this one being between him and the well known physiologist, Brücke:

Professor Brücke had a number of rabbits, undergoing a course of starvation for the purposes of some experiment. The first rabbit was killed and found fat and plump, and so on with the second and third. The cause of this remained a mystery until Brücke, happening near his pens one evening, saw Hyrtl industriously poking juicy cabbages to the rabbits through the bars of their prison. What further transpired my informant does not tell.

Of all the well known men now active at this university

Professor Billroth, the great surgeon and pathologist, is perhaps the most so. Ten years ago he was professor at Zurich, when he received and accepted a call to the chair of surgery at this university, since which time he has filled that position here and earned his well deserved fame. Billroth is a rather tall and heavily built man, in the prime of life, looking about forty-five years old. His finely formed face is set off by a full, black beard, and his head is adorned with the classic bald spot, invariably connected in one's mind with the idea of a great and learned man. He lectures on five days of the week, two hours daily, combining operations with his lectures on three days of the week. His lecture is delivered in an easy off-hand way, in a conversational style of language, entirely free from any rhetorical embellishments. At the clinics his patients are brought in one by one, some of the students being called upon to make a diagnosis. Everything is done as speedily as possible on account of the great abundance of material, but Billroth improves every chance to get in a joke.

He is quite an adherent to Lister's carbolic acid spray, but in the few operations I have seen him perform, he did not use the spray. In those operations he had the surface to be operated on, first washed with a diluted solution of carbolic acid, and in one operation—the removal of a large lipoma of twenty-three years' standing, and attached over the deltoid—he forced a stream of dilute carbolic acid through the wound several times after it had been sewed up. Not being a regular attendant at his clinics during the present term, I am unable to report any of his operations.

The number of students attending his lectures is about one hundred and fifty, among whom there are five female students, all Americans, I believe. This somewhat small number is due to the fact that Prof. V. Dumreicher holds his lectures and clinics at the same time as Prof. Billroth.

Prof. V. Dumreicher has filled his chair for over thirty

years. He is, of course, considerably older than Billroth, and is rather military-looking, due to his fierce, gray mustachio. He delivers his lectures while sitting, and in such a low voice that those on the back seats must pay close attention to understand him. His manner in clinics is much like that of Billroth, only that he is very gruff to the students when they make any errors in diagnosis. His hearers number about one hundred, with no representation of the gentler sex.

Before closing, I must mention the latest physiological discovery, that of Boll, in Rome. This observer, a few weeks ago, discovered that the retina is not white, or rather colorless, but that it is red, its want of color being a post mortem affair. This can be easily demonstrated in a freshly killed animal, as a frog, by quickly taking out the eye and removing the retina on a white surface, when the red color will be quite evident for an instant. Kühne has further investigated the subject, and found it to be due to the pigment of the choroid.

Respectfully,

A. M. BLEILE.

EDITORIAL.

In the midst of much that is discouraging to the true lover of his profession, there is one cheering fact that is brought to our notice from time to time, in the multiplication of medical libraries in our country. The great library of the Surgeon General's office at Washington we have seen mentioned in our exchanges as the largest *medical* library in the world. Whether this be literally true or not we cannot tell, but at any rate it is such a collection as we may well be proud of as American physicians. And in many other of our large cities there are growing up, either by private munificence or united effort, libraries which, if not very large, are very creditable, of great present benefit to the profession, and destined to be still more useful as time rolls on.

The multiplication of these libraries is a grand thing, and one to be encouraged and fostered by every man to whom the records and traditions of medicine, the oldest of the learned professions, are dear.

In such receptacles, both the old and the new, the ponderous and solid, as well as the ephemeral and fleeting, find place and preservation.

To them the student, and he is often the man of slenderest means, resorts for the material to carry on his researches, and as some fugacious leaflet or forgotten volume of quaint old lore yields just the fact or the clue he was in search of, he blesses the wise heads and considerate hearts that laid the foundation and worked so kindly for him though they never knew him.

Here should be gathered as complete and unbroken sets of all sorts of Journals as can be got together; here, pamphlets containing facts and suggestions which perhaps long since have gone into the common stock and are known to everybody, but the origin of which it is sometimes so hard to trace; here, old catalogues of colleges, hospitals, asylums, etc., which may yield to future laborers facts that otherwise they might have sought for in vain. In short, such a library should contain everything pertaining to the profession, directly or remotely, that can be procured, rejecting nothing, but preserving all alike with fostering care, for all men's use.

Much that the private collector does not care for, or that by its accumulation becomes an actual burden, should be laid by for reference.

Every city of considerable size throughout the length and breadth of our land should institute and cherish such a medical library.

It gives us great pleasure to announce that such an enterprise has been started, and fairly set on foot for Columbus, the capital city of Ohio. Numbering already nearly fifty thousand inhabitants, with an old and well established medical college, constantly growing both in size and importance, it ought to have a good medical library. The library of Starling Medical College has been largely increased of late, a new and beautiful room has been appropriated to its use, and it is the wish of the Trustees and Faculty to make it a library not only for the college, but for the whole profession of Columbus and its vicinity.

Entertaining the highest opinion of the value of such an enterprise, and desirous of everything that tends to elevate and enoble the profession, we have unsolicited made this reference in our Journal that we may assist the project, and make it as useful as possible.

We would appeal to all our readers, and especially to all the Alumni of Starling Medical College, to lend their aid toward making the collection as large and valuable as possible.

Many can send old books, old journals, old catalogues, that are of no value to them, perhaps in their way, but which, by their accumulation, will enrich the library with very desirable additions, often with things that it would be almost impossible to buy at any price. Again, there are many small libraries of deceased or retired physicians sleeping in old garrets and closets, doing nobody any good, that a hint or a request might divert into this general gathering, to be turned to good account.

The accommodation is ample for large stores of lettered wealth, and in the halls of the old College, which must be dear from association to many hearts, these now scattered volumes would find a fitting and a permanent home. And after we of this generation have "fallen on sleep," those who come after us will thank us for our kindly care. Other men have labored, and we are entered into their labors.

And what we thus owe to our predecessors we can best pay to our successors. Let us, then, in our place keep alight the torch of learning, and hand it down to future custodians, hoping they will acknowledge the debt by increased labor and fidelity in the good cause.

Any donations of books or pamphlets may be addressed to Dr. Otto Frankenberg, Starling Medical College, Columbus, Ohio.

The following numbers of the Ohio Medical and Surgical Journal are needed to complete the set now in the library: September, 1848; November, 1851; September and November, 1861. The librarian has duplicates of all the other numbers of this Journal, which he would be glad to exchange.

Old Catalogues and Circulars of the College are also earnestly solicited.

REPORTS OF SOCIETIES.

PROCEEDINGS OF THE COLUMBUS ACADEMY OF MEDICINE. Reported by
G. S. STEIN, M.D., Secretary.

STATED MEETING April 6, 1876.

Dr. N. S. Townsend called to the chair.

Case of Elephantiasis.—Dr. Frankenberg presented pathological specimens of the left kidney, lung, parts of the descending aorta and liver, removed from a patient who died in St. Francis Hospital from elephantiasis, of the soft variety. No history of the case could be obtained. His condition two days before death was that of a general loss of vitality.

The kidney showed fatty deposition to a large extent, one and a half inches in thickness; the lung presented the condition of anthracosis, the aorta had atheromatous deposits, while the liver showed what is known as the sago liver.

Modern Therapeutics.—Dr. Loving read an interesting paper upon the above subject. He commenced his paper by asking the following questions :

Is it true that the treatment of diseases, as advocated in the modern books on medicine, is more scientific and successful than those written thirty years ago ?

He claimed that it was not ; that the tendency of new books seemed to be towards nihilism ; and that this remarkable change in therapeutics was not due to our advance in knowledge. It seemed to him that the tendency of the present teaching is to forget the many valued remedies of the materia medica as taught by our fathers. There was too much pathology, too much microscope, and too little knowledge of the art of curing.

Dr. Pooley said that he felt himself challenged, and takes pleasure in repeating the statement he made concerning the treatment of rheumatism, that many cases of acute rheumatism would do better without than with medicine. The same he held to be true of typhoid fever and pneumonia. He claimed this as a direct advance, and not going back ; that it was not a fair charge that the modern books on medicine teach nihilism. He

thought that much of the therapeutics of the past was only learned to be forgotten.

Dr. Loving did not coincide with these views concerning the treatment of typhoid fever and pneumonia. He said therapeutics had made advances only in certain directions. The pathology of rheumatism, typhoid fever, and pneumonia is not better known now than it was thirty years ago. He thought we were forgetting a great many things that are valuable in the treatment of disease.

Case of Neuralgia.—Dr. Pooley reported a case of intermittent neuralgia of the head which was accompanied with intercostal neuralgia, for which he prescribed quinine and morphine, but without any effect. He then ordered Fowler's Solution, and in two days the neuralgia disappeared. In a day or two after this the patient was literally covered with a vesicular, semi-pustular eruption. This he considered the interesting therapeutic fact in the case.

STATED MEETING, April 20, 1877.

Dr. Alex. Neil, Vice-President, in the chair.

Spontaneous Cure of Hydrocele.—Dr. Pooley reported an extraordinary and interesting case of hydrocele. The patient, while mounted on a step-ladder, fell and struck on his side—did not fall on any of the genital organs. On going home he was surprised to find his swelling almost gone, and upon examination it was found that the integuments were very much thickened and ecchymosed. The disappearance of the hydrocele was accounted for, that in falling the sac was ruptured, discharging its contents into the cellular tissue, and its being then absorbed. He considered this spontaneous cure of hydrocele a rare accident.

Dr. Townsend reported a somewhat similar case. The man received a blow, which bruised the tumor badly, after which it gradually disappeared and got well. He also spoke of the fact that he had noticed that men were extremely shy of speaking about their hydroceles, and inquired why this was so.

Epilepsy.—Dr. C. W. Oleson then read a paper giving the history of a case of epilepsy, which was treated by large doses of bromide of potassium. In a week an acnelike eruption appeared, which was diagnosed by other physicians as variola, and in another week the patient was sent to the pest house. He claimed with Brown-Sequard that the cropping out of the eruption was an evidence of the curative influence of the bromide.

Chorea in Pregnancy.—Dr. Loving reported a case of chorea occurring in a pregnant female. He stated that during the last week the hand, foot, and leg were becoming bronzed, similar to the bronzing in Addison's

disease. This he considered the singular feature of the case. He then discussed the relation of skin diseases with nervous disorders. The cause of the chorea was first thought to be due to urea in the blood, but he finally concluded that it was rather due to reflex irritation from the gravid uterus. The case was successfully treated with the sulphate of zinc. He said the pathology of chorea is not well understood, that it is a stumbling-block, that it may originate from centric or eccentric causes, and that its treatment is purely empiricism.

Dr. Pooley related several cases of chorea. He claimed that treatment has little to do with the cure—that a large majority of cases get well if let alone. The most applicable treatment is iron and arsenic. This will meet more indications than any other remedies.

Dr. G. M. White also reported a case of chorea in a young married lady. At the end of the fourth month of pregnancy choreic symptoms were noticed. The only thing of interest in the case being that at her confinement there was an unusually large quantity of liquor amnii.

STATED MEETING, May 4, 1877.

Dr. P. M. Wagenhals, President, in the chair.

Case of Typhoid Fever.—Dr. Loving presented a pathological specimen of perforation of the intestines occurring in a case of typhoid fever. The perforation took place in the lower portion of the sigmoid flexure. He stated that this accident occurs in a little more than one per cent. of all fatal cases. The patient was thirty years of age, of good, sound health; temperate. For two years before this attack he suffered from proctitis. Two months prior to this attack of fever he seemed to have got perfectly well. Nothing of the origin of typhoid fever is known. There was nothing unusual in the attack. On the tenth day diarrhœa appeared, with the usual gurgling and distention. On the twelfth day the eruption appeared, which was very profuse, much more so than usual.

On the fifteenth day the patient grew worse; abdomen very much distended. On the sixteenth day the bowels distended enormously; has involuntary discharges; pulse, 130.

For the relief of the enormous distention the abdomen was aspirated, which produced much relief to the patient; pulse more feeble. These symptoms went on gradually, and on the seventeenth day the patient died. The temperature was not very high during the course of the fever.

The post-mortem confirmed the diagnosis, and demonstrated the fact that aspiration of the abdomen does not produce peritonitis.

Dr. Wagenhals spoke of the value of purgatives in typhoid fever. Also of large doses of sulphate of quinine. He believed such doses to be an irritant, and that it produced diarrhœa. He also inquired whether the

members of the Academy thought that the diarrhoea had anything to do with the temperature of the fever.

Dr. Farrell thought stimulants should be used in the earlier stages rather than in the latter stages, before the prostration comes on.

Dr. Neil said that the celebrated Dr. Lawson, of Cincinnati, Ohio, gave large doses of quinine in the outset of typhoid fever. He has tried this in vain—in his hands it did no good.

Dr. Pooley said the most successful treatment is by cold baths. He had no faith in medication in typhoid fever, except to ameliorate certain symptoms. Thinks small doses of quinine injurious—in larger doses we get a different effect. Stimulants, early in the disease, are uncalled for, and will do harm. Advises abstaining from them until they are needed. To procure sleep for the patient hydrate chloral is the best; for the diarrhoea, such remedies as are known to check it; for the peculiar condition of the tongue, which is properly dependent on intestinal irritation or inflammation, turpentine and stimulants. He does not believe that any medicine has any influence in typhoid fever *per se*; that typhoid fever patients can be better conducted through the fever without than with medicine. More can be accomplished by hygienic measures, such as ventilation, universal sponging of the body, nourishment at stated, regular times. Remedies to relieve complications and certain symptoms are sulphate of quinine in antipyretic doses.

Dr. Loving said large doses of quinine will reduce the temperature, but that it does so by causing depression of the nervous system. In giving the large doses we do not remove the cause that produces the elevation of the temperature. On this account he objects to its use.

Dr. Ferrell said that he had tested the use of large doses of quinine. He is now willing to abandon the practice. He prefers to treat the disease symptomatically.

The subject of quinine and the temperature in typhoid fever, was further discussed by Drs. Ferrell, Pooley, Neil, Stein, and Loving.

Dr. Loving thought that a very important thing in the treatment had not yet been mentioned, and that was water. He said give them as much as they want to drink; many die from the want of it. He also spoke of the percentage of mortality as it occurs in Paris, London, New York, and Columbus. He thought locality had a great deal to do with the percentage of deaths.

The President, Dr. Wagenhals, then made the following appointments of delegates:

Delegates to the American Medical Association, which meets in Chicago: Drs. Alex. Neil, C. W. Oleson, G. S. Stein, I. C. Kroesen, G. M. White, Norman Gay, N. S. Townshend, J. M. Wheaton, M. D. Brock, and F. Norman.

Delegates to the Ohio State Medical Society, which meets at Put-in-bay: Drs. E. B. Fullerton, H. B. Nunnemaker, O. Frankenberg, H. A. Mahlman, T. C. Hoover, L. T. Guerin, S. H. Steward, E. Heyl, J. B. Sensenig, and N. C. Reed.

STATED MEETING, May 11, 1877.

Dr. Alex. Neil, Vice-President, in the chair.

Case of Tubercular Laryngitis.—Dr. Loving presented a pathological specimen of a larynx in an ulcerated condition, occurring in case of tubercular laryngitis. A woman, aged twenty-four years, married, mother of three children, has led a rather irregular life, complains of sore-throat and cough. Upon examination the epiglottis was found to be thickened and inflamed; pharynx also inflamed; has an irritating, hacking cough, indistinct voice, tenderness over the larynx, cavernous respiration at the top of the left lung.

All these symptoms increased as the case progressed, and finally the woman died from starvation. At the post-mortem it was found that the vocal cords were entirely destroyed, the posterior surface of the epiglottis inflamed and ulcerated, tuberculous cavity at the apex of the left lung. As far as could be ascertained, there was no trace of syphilis in the history of the case. He then discussed the nature of tubercular laryngitis.

Dr. Pooley proposed the following questions: First, do cases of tubercular laryngitis ever die from laryngeal dyspnœa? Second, would it be justifiable to perform tracheotomy in such cases? Third, is tubercular laryngitis more frequent in women than in men?

Dr. Loving said he had never seen but one case where he thought the operation justifiable, and while they were preparing for it the patient died. His experience was that it was more frequent in women than in men.

Epithelioma.—Dr. Pooley presented a hand which he had amputated for epithelioma. The disease commenced four years ago as a wart on the middle knuckle. About a year ago it was treated rather vigorously by some so-called "cancer doctor." This treatment seemed to aggravate the disease and increase its growth.

The epitheliomatous growth was rather large, very painful, and exceedingly offensive; hemorrhages of considerable extent took place several times.

The circular operation was performed some inches above the wrist; Esmarch's bandage was used; but little blood was lost. The wound was brought together with the interrupted sutures, and the wound then immersed in raw cotton, it being dressed perfectly dry.

He then explained the origin of epithelioma, and said that it often

originated in sores, warts, moles, and excrescences of the skin, that a degeneration of this is a common source, and that when they showed the least sign of prolieration they should be removed.

Dr. Wagenhals spoke of the cancerous diathesis, and of its being hereditary. He claimed that it was transmissible, the same as tuberculosis.

Dr. Pooley said he did not believe in the cancerous diathesis, nor in its being always hereditary; it is a common disease; does not believe in the cancerous cachexia; it is a myth; we are not sure of the constitutional origin of cancer. He was inclined to the view that it is local in its origin.

Fracture of the Bones of the Foot.—Dr. Pooley now presented the bones of the foot of an unfortunate individual who had jumped from the fifth story of the American House. The sole of the foot was completely wrecked. The *os calcis*, astragalus, the base of the metatarsus, the lower ends of the tibia and fibula were all fractured. He then detailed the history of the case, operation, after treatment, and post-mortem appearance.

Mild-Diphtheria.—Dr. Fullerton reported a case of mild-diphtheria, which had the usual symptoms, and received the usual treatment. In a few days the patient had great suborbital pains of the right side, which became generally diffused over the whole head. In a few days more there appeared an abscess in the left middle ear.

STATED MEETING, May 18, 1877.

Dr. G. M. White called to the chair.

Case of Ptosis of the Eye.—Dr. Pooley reported a case of ptosis of the left eye-lid, which came to him to be relieved. Upon examination, he found complete paralysis of all the muscles of the eye, pupils dilated and irresponsible to light. Had made arrangements for an operation for the relief of the ptosis, but in the meantime the patient took sick and sent for him. He found her suffering from partial hemiplegia, which developed into complete hemiplegia by the next morning. There was also an eruption over the whole body. He prescribed iodide of potassium, forty grains every two hours. He thought these symptoms pointed purely to the phenomena of paralysis, but the improvement which followed the use of the iodide of potassium proves, perhaps, that it is properly syphilis. He said that the tendency now is that all obscure diseases of the brain are due to syphilis.

Dr. Loving said he believed the cause to be syphilis, but does not agree with the views of Hughlings Jackson, that syphilis is at the bottom of all obscure cases of paralysis and diseases of the brain. It may be perfectly

safe to assert this in London, Paris, and New York, but it would not be safe to say that it is so in Ohio.

Dr. Loving further remarked that paralysis may arise from common inflammation of the membranes of the brain, and that this might have been the cause in this case, but as the patient improved on the use of large doses of iodide of potassium he was inclined to think that the paralysis was due to syphilis. He, also, was in favor of large doses of iodide of potassium; that it was a useless thing to give three, four or five grains three or four times a day. Large doses produce remarkable results.

Case of Softening of the Brain.—Dr. Loving then reported the following case: A gentleman fifty-nine years of age, small stature, spare, thin habit of body, dark hair, blue eyes. Always has lived in cities; free from gross immoralities. Health up to 1862 remarkably good. In 1863–64 went to Memphis to trade in cotton, from which he suffered intense mental anxiety, producing great emaciation; finally contracted chronic diarrhoea, from which he suffered more or less for three or four years—for five or six years the diarrhoea was less violent. Very much emaciated, he grew rapidly old, his form somewhat bent. He exhibited no sign of disease until last January, when he at one time suddenly forgot where he was going, his speech also being lost at the same time. When he came home he recovered the use of his mind and speech, and went and attended to business as usual. After three or four days he noticed pricking in his fingers, and in a few days after this became hemiplegic. At a later time the pupil of the eye became dilated. Very much restlessness and great prostration; the opposite side and hand in constant motion when not under the influence of anodynes; also the foot of the unaffected side constantly in motion; intense pain across his forehead. The symptoms constantly increased until he died. The muscles of respiration were also involved. Morphia hypodermically had a happy effect. Large doses of iodide of sodium were administered.

He mentioned this case simply because of the points of similarity to the case of Dr. Pooley just reported.

Dr. Pooley replied, and said that he could not take this view of the case. He thought the patient died from softening of the brain—from embolism. The points of similarity are not to his mind numerous or striking.

Cancer of Stomach.—Dr. Loving now presented a pathological specimen of cancer of the stomach, involving the cardiac orifice and œsophagus, with stricture of the œsophagus. He said this is a very common disease in Columbus, that it is more common than ulcer of the stomach. The patient's age is forty-six or forty-eight; laborer; intemperate—dates his

trouble to drinking; constant sufferer ever since. The most marked symptom was in his deglutition. Great emaciation. The patient died from starvation. The heart was also presented, simply to show its diminutiveness. It was perfectly normal, but very diminutive in size.

Dr. Sausenig reported a case of pneumonia which is now under his observation. Lady; married. On the first of May was attacked with pneumonia of lower lobe of right lung, which ran through its course, nothing unusual presenting itself until about the tenth day, when the patient expectorated about one and a half pints of pus, which produced great relief. On the thirteenth day the same thing occurred. Has more fever, more cough, and expectorated about one pint of pus, which again produced much relief. The next day Dr. Loving saw the case in consultation. Much cough, high fever, respiration 44, pulse 130, and again expectorated about one pint of matter.

Not having the notes of the case at hand, he promised to report the case more at length at some future meeting of the Academy.

(P. S.—Full reports of the Academy proceedings will appear in our columns regularly.)

REVIEWS AND BOOK NOTICES.

The Medical Register and Directory of the United States, Sytematically Arranged by States, etc., etc., by SAMUEL W. BUTTER, M.D. Second Edition Revised and Corrected, Philadelphia, 1877.

The first edition of this work was published in 1874; of it we have no opinion to offer, as we never gave it a critical examination.

But having looked a little more closely into this second edition, we present our readers with the results of our inspection. It is said to be "revised and corrected," and, of course, the value of such a work as this depends entirely upon the accuracy with which this revision and correction has been carried out. For, if the information conveyed is accurate, and to be depended on, the book will be an great convenience, and in many ways very useful to the profession; but if not, it is not only useless, but much worse than useless, positively misleading and injurious. We are sorry to say that as far as our examination enables us to judge, the latter is the case with regard to the work before us.

In the first place, we notice the absence of a large number of names that ought to be here, but which we have looked for in vain.

Serious, however, as are these faults of omission, those of commission are still graver; no notice whatever is taken of deaths, changes by removal, etc.; indeed, the work so far from being "revised and corrected,"

seems to be simply a reprint of the first edition, and, therefore necessarily, to a great degree, inaccurate and worthless.

The specification of any single critic in such a matter must, of course, be confined to the limited field of his own knowledge and acquaintance; but if within this sphere there be found mistakes and inaccuracies, it surely is not unfair to infer that every other reader would discover the same, and the aggregate result must be fatal to all confidence in what was intended to be a safe guide, and which must fulfill this just expectation to some reasonable degree to be of any use at all.

We will just mention a few of the blunders we have noted in a rather cursory examination of the work before us. We find William Badger, Hastings, New York, though Dr. Badger left Hastings more than three years ago, and has since been settled in Long Island. Dr. James H. Pooley's address is still given as Yonkers, New York, though he has been settled for nearly two years in Columbus, Ohio. Dr. C. F. Rodenstein's address remains Fordham, New York, though he has been dead for three years. Dr. J. W. Hamilton, of Columbus, is still Professor of Surgery in Starling Medical College, according to the Directory, though he resigned that position in 1875. In the list of societies for New York State, Dr. Sprague is given as President of the Yonkers Medical Association, and Dr. T. R. Pooley as Secretary, and this in a directory published in 1877; while the fact is, these gentlemen held the offices attributed to them in 1873, and one of them, Dr. Sprague, has been dead over three years. And to crown all, we have among the medical institutions of Ohio a description, accompanied with a handsome engraving, of the College of Physicians and Surgeons, of Columbus, an institution that never had any existence at all.

Such are a few, and had we time, or were it worth while, we could give many more of the inaccuracies of this much advertised Directory.

While a good, reliable work of this kind would be exceedingly valuable, we feel compelled to say that the present bulky mass of misinformation is a pretentious fraud, and to warn the profession against it.

A Course of Practical Histology, being an Introduction to the use of the Microscope. By Edward Albert Schäfer, Assistant Professor of Physiology in University College, London. Philadelphia: Henry C. Lea, 1877.

This is an excellent little manual; and though presenting much that many will consider far from elementary, does so in the clearest manner possible, and will, numerous as are the books on the microscope which have appeared of late years, fill a place still vacant, and fill it well. Histology, long regarded by many as one of the refinements of science, has risen to the front rank of importance, and must year by year assert itself more and more.

Only by knowing thoroughly the ultimate structures of tissues can we comprehend the delicate and mysterious process taking place in them, which we call functions.

And surely without this knowledge, our attempts to point out and understand the morbid alterations, which constitute disease, are mere presumption. So that whether we approach it from the theoretical or practical side, it will seem that this comparatively new department of science stands at the threshold of medical knowledge.

Clear as this seems to us, we have reason to believe that it is not yet fully recognized, and we meet, not unfrequently, with descriptions of pathological lesion, which betray the fact that their authors are unaware of the healthy structure of the part whose diseased appearances they do not hesitate to describe. But attention is being so constantly called in this direction, that more or less is getting to be generally known on the subject; but besides this general knowledge, there is an increasing number of students and young physicians who desire to work for themselves, and see, as well as read about, the histological elements of the tissues. For these, many of whom are deterred by the difficulties of the subject, and it is not to be denied that these are sometimes great, this little work will be a most valuable and acceptable assistance.

The Mortality of Surgical Operations in the Upper Lake States, compared with that of Other Regions. By Edmund Andrews, A.M., M.D., assisted by Thomas B. Lacey, M.D., Chicago: 1877.

This is a thick pamphlet of 123 pages, but it represents within these limits more hard work than many a portly and pretentious quarto or octavo.

None but he who has tried it knows the labor involved in the collection and arrangement of such statistics as are here contained, and consequently such labor is generally slighted and unappreciated by the profession, and as far as extraneous reward extends, it is the most unrequited, as well as arduous, of toils.

We owe to such compilers a debt of gratitude that our thanks can poorly pay, and yet we offer them our heartiest thanks for the work they have done for us, and the results of long and tedious research which they have placed ready to our hands.

The scope, and something of the extent, of the brochure before us may be partially understood from the following statement of the author, in his preface:

"The preparation of this paper, which is reprinted from the Chicago Medical Journal and Examiner has been a work of immense labor. My plan has been to compare the results of each surgical operation in the Lake States with the same in other regions. To obtain the statistics of the latter, a wide array of surgical literature had to be consulted, in

several languages, and at a great expenditure of time. After comparing the statistical results of any given operation, both at home and abroad, I have collected and appended the opinions of the chief surgical authorities of both Continents as to the cases suited to its performance, and added my own reasons and conclusions to theirs. The surgeon, therefore, can obtain, at a glance, the results of any operation, both here and elsewhere, and with them the opinions of the principal authors respecting it.

"All surgeons have felt the need of such a condensed view of operative surgery, yet there is not in the English language a single work supplying the want."

Such a plan as this, if well carried out, and it seems to us to have been very thoroughly and honestly done, must be a great convenience to the surgical world, and may often help the surgeon to decide where the reasons, pro and con, are perplexingly balanced, upon a given course of procedure.

The opening sentences of this little volume contain statements which had for us all the excitement of complete novelty, and will, we think, be as new and strange to many of our readers.

"Operative surgery in the Lake States of America has results widely different from those of the Atlantic Region and of Europe. Many operations are much less fatal here than there, so that to the most important of all questions about a proposed operation, viz., What is its danger? the Western practitioner can find no book to furnish him a correct answer." His statement, which seems to be fully borne out by what follows, would be a little more satisfactory if the geographical limits to which it is applied were more definitely stated, such phrases as "Lake States" and "Western" having a certain vagueness, as well as amplitude, about them.

The first table shows the mortality of the four major amputations in the Lake States as compared with the same operations elsewhere, and as the author justly says—

"The first thing which strikes the Western surgeon in this table, is the prodigious excess of mortality reported almost everywhere. With us the average mortality of all the four major amputations combined, is only twenty per cent., while in the hospitals of the Atlantic States it is thirty per cent.; in the great Imperial General Hospital, of Vienna, thirty-six per cent., in the British hospitals forty-one per cent., and in the famous hospitals of Paris it attains the astonishing figure of sixty per cent."

These are certainly important and startling results, to which general attention should be called, that they may be confirmed or refuted, or, at any rate, their significance duly weighed in all future estimate of any given operation.

The second table, on the results of herniotomy, shows an almost identical disparity in favor of the lake States. In this table there is another thing that arrests attention at once, viz.: the immensely larger number of herniotomy operations in all the foreign statistics than in our own. We

do not believe that hernia is more common in Europe than with us, but we have long been aware that operations for hernia are much more so, nor does a solution of the fact occur to us. Following this table, the author has some valuable remarks on the statistical method of dealing with surgical questions, and some rather severe, but we are afraid not unmerited, strictures on the methods of compiling statistics from circulars promiscuously distributed, or from medical journals alone.

Passing on from these general considerations, the author proceeds to take up all the principal operations of surgery, and deal with each one separately; the result is, a mass of well digested information, of great interest, and sometimes quite surprising, but which, of course, we can not refer to in detail.

The work concludes with a table, Table XVII., which we think is unequalled in surgical literature, giving the comparative mortality in the lake States, and abroad of every important operation in surgery.

Dr. Andrews is to be congratulated upon the completion of his onerous task, and the literature of our profession on being enriched by a sterling and withal novel contribution of no ordinary importance.

Contributions to Operative Surgery and Surgical Pathology. By J. M. Carnochan, M.D., New York: Harper & Brothers, 1877. Parts 1 and 2.

This work was commenced several years ago, and was interrupted by a fire which destroyed the establishment of the printer, by which the plates, drawings, etc., were lost. We are glad that even now, after the lapse of several years, the author has decided to recommence, and, we hope, this time will be permitted to perfect his original design.

Such books as the present are, we confess, very much to our taste, and we never tire of them, turning to their pages with ever new interest, however busy or wearied with professional labor.

And such works might be more frequently written, if our busy practitioners would only cultivate the habit of writing; there are many men whose experience has been immense, but whose record of it, if there be one at all, is most meager and paltry.

Such negligence is not only an injustice to themselves, but to us, who would gladly learn from their experience, and to the world, which grateful for their labors, would also be grateful for a record of them.

These records of actual practice, particularly in its surgical department, are as interesting to us as the story of campaign and battle to the veteran warrior. There are many such books on our shelves and always room for more.

Only think what a work of this kind the late Prof. Blackman, of Cin-

cinnati, could have written! A man of wonderful surgical learning, and immense experience, but who has not left that memorial in the literature of his profession which might justly have been expected of him.

Dr. Carnochan's work is being published by the Harpers in quarto, and in successive parts, with full page illustrations.

We dislike the taking of any work in separate parts, but must, of course, accommodate ourselves to the convenience of author and publisher.

The quarto page, with good margin, we confess a love for; there is something noble and liberal about it which gives pleasure to the eye of a book-lover before he ever begins to read. The older authors often presented themselves in such a dress. Sir Astley Cooper's incomparable monographs originally appeared thus, and we have never quite become reconciled to the scrimp octavo to which he has been condemned in the American reprint.

The paper and print of the work before us are excellent, and, when completed, it will make a handsome volume; and we like handsome volumes, and we think the doctor's shelves should be graced with such as well other people's.

By way of introduction, Dr. Carnochan has inserted an address delivered years ago at the New York Medical College, which we remember to have read with great interest at the time, and which is very appropriate here.

But the main interest of the present installment is in the cases of ligation of arterial trunks for the cure or control of Elephantiasis, and it must be exceedingly gratifying to the author to find this improvement, which he was the first to propose and execute, adopted as one of the regular resources of the surgical art. We shall look with great interest for the forthcoming numbers of this work.

A Manual of General Pathology for the use of Students and Practitioners of Medicine. By Ernst Wagner, M.D., Professor of General Pathology, etc., in the University of Leipzig. Translated from the Sixth German Edition by John Van Dyyn, M.D., and E. C. Seguin, M.D., New York: William Wood & Co., 1876.

Hardly a book has been translated from the German, of late years, that is as thoroughly good, and likely to be as universally useful, as this one. Since Williams' Principles of Medicine, which is largely out of date, though still an book excellent for those who know how to make allowances for its deficiencies, there has been nothing that we know of that so thoroughly and satisfactorily covers the ground of "Principles of Medicine" as this book.

It is divided into four parts; the first treats of General Nosology, the second of General Aetiology, the third of General Pathological Anatomy and Physiology, and the fourth of the Pathology of the Blood.

The author acknowledges very frankly the difficulty that besets his subject in the very outset, in framing a definition, or even any thing like a general conception of disease, and says, "In a strict, scientific sense, it may be said that no one is healthy."

The first part, or General Nosology, certainly seems to present little or nothing to justify its title; there is nothing in it that corresponds to our ordinary conception of the word Nosology, and any one who turns to it expecting to find a classification of diseases, as we did, will be disappointed. Its table of contents is as follows: General Conception and Forms of Morbid State; Nature of Disease; Extension of Disease; Sources of General Pathology, General Symptomatology and Diagnosis; General Prognosis; Duration of Disease; Cause of Disease; Termination of Disease; Agony; Apparent Death; Cause of Death.

Under these heads we have a variety of elementary and introductory matter, briefly, but ably, dealt with. We find nothing remarkable, but clear, good sense, and easy mastery of these fundamentals, mark each section.

The most thorough of these sections, and that which interested us most, are those on apparent death, and the signs of real death. These are all well worth reading, and we would recommend those who do not intend to read the book through, at least to read these pages.

Part second, General Aetiology, is very thorough and suggestive. We were hardly prepared for, and hardly willing to agree to, its opening sentence—"Aetiology, or the knowledge of the causes of disease, is one of the weakest chapters of pathology." With all the labor that has been recently expended on this department, and that is now being put forth, we should be loth to believe this statement. Truly, there is much to learn, and, perhaps, still more to unlearn, in the way of baseless surmise and conjecture, but it seems to us that this very chapter will prove that its opening sentence is a little too strong.

The remaining parts, on General Pathological Anatomy and Physiology, and the Pathology of the Blood, are masterly. Wide and varied knowledge, with full control of it, and a happy faculty of discriminating and pointing out both its triumphs and its deficiencies, are evident throughout. Thorough study of such a book will lay a good foundation for medical scholarship of the best kind. To the translators of this work high praise must be awarded; they have given us, what is rare enough, a readable and enjoyable version of a foreign author, and laid English readers under no small debt of obligation to them.

Transactions of the New York Pathological Society, founded in 1844.
Volume 1. John C. Peters, M.D., Editor, New York: William Wood & Co., 1876.

The profession at large will be glad to see this volume, not only on account of what it contains, but as a harbinger of future volumes as well, by which the immense stores of material of this important society will be made, to some extent, available to all. The present collection gives evidence of much good and thorough work, and to a science built up by the accumulation of individual facts and observations, such a storehouse is of the first importance. The list of specimens of diseases of the various organs of respiration, circulation, digestion, etc., will be appreciated by the students and writers of the profession. And the society that has published the volume in the face of the fact that it can hardly be expected to pay, shows a true scientific spirit, worthy of all praise and imitation.

A Practical Treatise on Materia Medica and Therapeutics. By Robert Bartholow, M.A., M.D., New York: D. Appleton & Co., 1877.

The world is full of books, and to many it would seem that a new work on so trite and hackneyed a theme as this might well be spared.

But, notwithstanding the multitude of publications on this or any other subject, there is always room for a new one, if it is a good one; and, notwithstanding the rather violent and personal attacks of some of his critics, Dr. Bartholow's is a good book; indeed, we think we hazard nothing in saying, the best text-book we have.

The first annual meeting of the American Dermatological Association will be held at Niagara Falls on the fourth day of September next.

"The titles of all papers to be read at any annual session shall be forwarded to the Secretary, not later than one month before the first day of the session."

JAMES C. WHITE, M.D., *President*,
LOUIS A. DUHRING, M.D., } *Vice-Presidents*.
ROB'T W. TAYLOR, M.D., }
L. DUNCAN BULKLEY, M.D., *Secretary*.
JAS. NEVINS HYDE, M.D., *Treasurer*.

OHIO

MEDICAL AND SURGICAL JOURNAL.

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New Series.

ORIGINAL COMMUNICATIONS.

ART. I.—*The Germ Theory of Disease.* Lectures delivered before the House-Staff and the School of Nurses at Charity Hospital. By W. M. CHAMBERLAIN, M.D., one of the Obstetric Physicians to the Hospital.

One of the great discoveries of modern science is the immense variety and number of living forms which people the world. As the telescope directed upon apparently formless bands of light in the sky has shown that they can be resolved into multitudes of separate stars, so the microscope directed upon apparently structureless masses of matter has shown that they consist of the forms of living things, or the remains of things that have lived. Thus the chalk formation, which makes up a large portion of the island of England, is seen to be composed of the skeletons of minute infusorial creatures, unnumbered as the sands of the shore, and much more minute. The glass which shows the grain of sand, like a rock of crystal, with sharp angles and shining facets, will also show a little thread-like body, which beneath a higher magnifying power is seen to have parts and structure and organs, and to be endowed with the power of independent movement. With each improvement of the glass new orders of minuter beings are revealed. That which twenty years ago, with an objective of one-eighth of an inch focus, seemed mere lifeless matter, we can now, with a fiftieth power, see to be perfectly organized and endowed with life.

These little living creatures pervade everything and can

not be excluded. The water in which a wisp of hay has been thoroughly boiled may be carefully filtered and closely sealed in a bottle, and placed in the sunlight. In a few days it will be found to be full of living things. These living things are all about us, in the food we eat, in the water we drink, in the air we breathe. They enter our bodies through many avenues, and wherever they find conditions suitable they reproduce their kind, and multiply in numbers which transcend arithmetic.

A man may eat a little piece of pork infested with trichina, and in a few days the muscles all over the body, which should be red, will become quite gray, with little white spots, each one of which the microscope will show to be a white worm coiled up in a case. We touch an infected hand, and in a few days the softer portions of the skin may be marked with little red furrows, from the end of each of which an acarus may be lifted out. Twelve thousand eggs have been found in one out of the thousand joints of a tape-worm. A red point appears on the neck of a child, which day by day widens out as the ripples round a stone dropped into the water. The circumference of the patch is reddened and elevated. Scrape the skin on the margins of this ring-worm and you will find, under the glass, multitudes of living and growing things. In the blood of patients sick of relapsing fever may be found multitudes of little living spinal filaments, called the spirilla, first detected by Obermeyer, in 1868, and verified by many other observers.

Whatever has been hitherto said is accepted and undisputed truth. The forms of living parasites which I have named are so coarse and large that any one may be sure of their presence and their character. The researches of Pasteur, in France, and of the commissioners appointed by the English government to inquire into the causes of the cattle plague, have shown that the diseases which destroy the vines of France and the live-stock of England are occasioned by

multitudes of parasitic organisms, living upon and in and at the expense of the higher forms of life. In proportion as we descend in the scale of living things, the conditions necessary for existence become fewer and more simple, and therefore the number of things actual or possible increases. Some of you will remember the fable of *Æsop*, which gives the conversation of a friendly lioness with a vain little rabbit. The rabbit says, "I sometimes have five or six young ones at a birth, you have only one." The lioness replies, "Only one, but that is a lion!"* The higher ranks of human society are comparatively sterile. Thus the world of living things may be compared to a pyramid. One slender stone represents man at the apex. Layer by layer the structure widens downward, increasing in number and in area by a geometrical ratio. The fact that certain diseases have been shown beyond question to depend upon the presence of parasitic organisms in the system, has suggested the inquiry how far disease in general may depend on such a cause. To this inquiry such men as Tyndall, Burdon Sanderson, and Lister, and many others in Great Britain and on the continent, have given most careful and ingenious studies, which have developed many facts and many lines of argument, which woven together are known as the Germ Theory of Disease.

This is the subject which I intend to present to you this afternoon. First we will consider what is meant by communicable disease, or contagion; then what is meant by an organism, and what are the common phenomena of organisms, and how their action differs from chemical action; then we will review some of the chief phenomena of communicable diseases, and show how they are better explained by supposing them dependent upon the presence of foreign or-

* The shad deposits, it is said, 1,250,000 eggs; the whale has but one or two calves.

ganisms than in any other way. In this latter portion of my lecture I shall mainly follow the order in which Doctor Maclagan, of Oxford, has treated the subject in his recent work, and shall often use his words. To this treatise I would refer you as a very able and interesting book.

Communicable diseases are those which in any way pass from one person to another. Some are strictly contagious, because practically they are not communicated except by the contact of some part of a sick with some part of a sound body. Such are the venereal diseases and the itch. Some are contagious and infectious, that is they are communicated by contact and by presence without contact. Such are called endemic when they affect the dwellers in some separate locality, and epidemic when they pass from one community to another, finding many subjects in each. Epidemics are the great scourges of society. When the epidemic influence has been intense, communities, races, and nations are swept off as if by fire or whirlwind. Every susceptible subject is affected with the disease, which does not stop as long as material remains. An epidemic becomes virulent in proportion as a community is crowded. Undue crowding generally begets epidemics, which thus hang about camps, ships, jails, and hospitals. This fact is recognized in the names "camp fever," "ship fever," "jail fever," "hospitalism."* All these

* In 1828, in the march from the Pruth to the Balkan—the same which the Russians are making just now—they lost 80,000 men, mostly from fever and cholera. Ships have been occasionally seen floating idly over the sea, upon which every soul had perished by yellow fever. In the paper of this morning (May 27th) it is said that the Turks in the fortress of Silistria are dying from typhus at the rate of a hundred a day, and at Bagdad from plague at the rate of five hundred a day.

Indirect War Losses.—During the Crimean campaign of one year and a half 341,000 men were buried in the district of Taurida, which includes the Crimea. The Russians lost 170,000 soldiers, the English, French, and Turks, 156,000; and there were 15,000 Tartar victims. Of this total 324,800 were interred in the Crimea, including 210,000 in the neighbor-

diseases are fevers in their type, and now it is coming to be believed that all fevers are also of this class of diseases; that is that they are, the result of some influence which passes from one form of living matter to another.

No question can be more interesting than the inquiry, What are these influences? what their modes of transmission and of action? We have said that they are believed by many to be minute organisms. What, then, is an organism? The answer is: A distinct and separate living form, it matters not how large or how small. An organism has always some structure—it may be a very simple one—some adaptation of parts to functions by which it derives nutriment from its surroundings and appropriates to its own growth, and some mode of reproducing its kind. This *kind* is uniform and true. One generation, or one succession of generations, is just like another in form and function. They come into being, they live, they grow, they reproduce, they die, in the same way, each according to its kind. Whether the form be that of a cell, a disk, a rod, a ball, a hair, chemical analysis resolves them all into hydrogen, nitrogen, oxygen, and carbon, carbon not appearing a constant or necessary element. Thus

hood of Sebastopol. Those killed in battle were but 30,000, and allowing an equal number for the losses from wounds, 281,000 must have succumbed from disease. The deaths of sick persons sent away from the seat of war were about 60,000 more, which makes the number of dead from the Crimean campaign alone over 410,000. It will be seen from the above calculation that out of some 410,000 soldiers who succumbed during the Crimean campaign, 30,000 only were actually killed in battle, some 300,000 dying from disease. How many of these deaths were entirely preventable had a more judicious and liberal use been made of medical assistance, it were vain to speculate; but of this there can be no doubt, that a well found medical staff, although apparently a costly item, is in the long run by far the most economical investment a nation undertaking a campaign can make. The loss of 100,000 or 200,000 trained soldiers from sickness is a very serious consideration, and one a nation proud of its reputation for science might well be ashamed of.—*Lancet*.

nitrogen and water (H. O.) are the materials of which they are made, the food on which they live and grow. The organisms which we are specially considering we will call, for convenience, contagia, or, in the singular, contagium, and the stage of their existence in which we are most interested in them is their first or germinal stage. Even when fully developed, they are, for the most part, microscopic objects; a few only, like the trichina, being visible to the unaided eye. In this germinal stage they are so minute that they appear as amorphous granular matter. The germ of any animal life is in size but a small fraction of the creature which originated it or the creature into which it may develop, and a very small fraction of an object which is itself microscopic must be small indeed. It is only by recognizing the fact that they grow and move that we come to know that they are indeed living germs.

The evidence that they are the material of contagion is both direct and indirect, or inferential. The direct is contained in the observations of Drs. Bell, Chauveau, Burdon Sanderson, and others upon the fluids of small-pox and sheep pox vesicles. These observers found that the lymph collected from these sources contained many small granular particles, and that when the lymph was mixed with many times its volume of water inoculation produced very uncertain results. Sometimes it would take. When it did so, the disease produced was as active and positive as that produced by the inoculation of pure, unmixed lymph. Oftener it would fail to take at all. This observation proved that the contagion was not soluble in water—in other words, could not be diluted.

Then it was found that if the lymph and water which had been mixed were allowed to stand awhile, the upper portion of the fluid appeared to be pure water, and no inoculation could be made with it; while the lower portion contained all the granular matter, and inoculation with it was always successful. This proved that the contagion resided in the

granules, and was not diffusible, as it would have been, if its properties were chemical. Let us now consider the phenomena of small-pox poison as contrasted with that of a chemical poison :

1. Of a chemical poison, a definite quantity is necessary to the production of any effect.

2. The severity of the symptoms and the extent of the local lesion are in proportion to the quantity of the poison taken in.

3. The quantity of the poison eliminated from the system or existing in it is never in excess of the quantity taken in.

4. Of chemical poisons, a small quantity produces in a susceptible system no poisonous effect.

5. The system, having recovered from the effects of one dose, another will be equally effective.

6. The poison continues to act and to produce local lesions so long as a sufficient quantity is present.

Of small-pox poison, the smallest quantity is sufficient to produce the fullest effect.

The severity of the symptoms and the extent of the lesions bear no proportion to the quantity taken into the system.

The quantity developed in and eliminated from the system is vastly in excess of that taken in.

Of small-pox poison, the least quantity in a susceptible system may produce the direct effect.

The system, having recovered from the effects of one dose, all future ones will be without effect.

The local lesion mends and the contagion ceases to produce its general effect, while much of it remains in the system.

Thus we see there are very marked differences in the behavior of a chemical poison and a contagion.

Let us now place the phenomena of a contagion in comparison with those of a germ, a vegetable seed, for example. A dry seed, so small as to be almost invisible, drops into the earth, which closes over it. A film of dried lymph, almost invisible upon the point of a lancet, is carried beneath the skin, which closes over it. The seed remains unseen in the soil, going through the process of germination. The lymph remains quiet in the skin, going through its stage of incubation. By and by the seed bursts the soil again where it was planted. By and by the contagion declares itself by a vesicle over the point of inoculation. The plant may grow and

spread until it becomes a tree, and the fowls of heaven lodge in its branches. The eruption may multiply until it covers the surface of the body. The tree will reproduce the seed which originated it a thousand-fold. The disease will reproduce the contagion which originated it a million-fold.

You may see a little downy seed, floating like a mote in the air, and you can not tell whether it is of a thistle or a silk weed, a dandelion or a groundsel; but when it has been received into the soil and grown again, you know that it will surely bring forth its kind.

You may send a susceptible child into a room where contagion, quite invisible, floats in the air, which may seem perfectly bright and pure. If you do not know before hand, you can not, for the life of you, tell what seeds are there. But wait a week and the face of the child will help you to a diagnosis. Measles will produce measles, scarlet fever will produce scarlet fever, and diphtheria diphtheria forever. Each seed has its own period of germination; so has each disease its own period of incubation. In both the changes are so slow and silent that the presence of neither is revealed to common observation.

The development of each is attended with the evolution or liberation of heat. Before the blush of fever comes to the child the thermometer shows altered temperature; before the shoots break from the moistened barley in the brew-house the malt heap feels warm to the hand, and may even give off a steam.

The continued growth of each exhausts the soil of its required nutriment. It takes years to do so in the case of the vegetable, but finally it is done. You can no longer raise tobacco in the tide-water lands of Virginia, and the eruptive diseases rarely occur twice in the same persons. In relapsing fever the disease retires until a fresh amount of pabulum is reproduced, even as apple orchards bear every second year.

The view that contagion consists in particles which are

the seeds of disease, rather than in a diffused and general contamination of the air, is well illustrated by Dr. Maclagan, as follows :

“ A regiment of soldiers goes into action ; the whole body of men is enveloped in the smoke of conflict, but only those fall who are struck by the invisible but flying bullets. So a number of persons pass through the chamber of contagion. All breathe the air, but only those are infected who inhale the floating and invisible germ. Obviously, the soldiers will fall in proportion as the bullets fly thickly ; so will the person, who traverses an air when only an occasional germ is floating, again and again escape uninfected. But if the air be crowded with them he can not escape.”

Dr. Erichsen has well shown this. His male accident ward in the University College Hospital is intended to hold fourteen patients, and to give to each 1,500 cubic feet of space, about the size of ward 8, female, in our building. He says :

“ In the ward we have had many outbreaks of septic disease, pyæmia and erysipelas, invariably the result of the accidental accumulation within it, not always of too large a number of patients, but of too many cases of injury with wounds in a state of suppuration. The average number of open wounds in this ward is about seven, or half the number of patients it contains ; and if the wound be not severe, such a number can be contained in it with moderate safety. But if they rise above this number, or if the majority be severe, then septic disease will certainly break out.”

A single case of a certain variety and of aggravated character may set free germs enough to infect every susceptible subject who remains near it. I quote again from Dr. Erichsen, because no authority commands more general respect, and because, having been senior surgeon of one of the best London hospital for twenty successive years, his observations are of great weight. Referring to the ward above mentioned, he says :

“On January 17, 1871, a case of phlegmonous erysipelas of the leg was accidentally brought into this ward. As soon as the nature of the case was known it was removed, having remained in the ward only about two hours. At that time the ward was perfectly healthy, but a few days after a patient lying in the next bed to that which the erysipelatous patient had occupied, was seized with erysipelas. On the 22d I performed five operations on patients in this ward. Of these cases three were attacked by erysipelas on the 24th; the operations were of minor importance; but all of these cases died. On the 24th a patient was operated on for strangulated femoral hernia. He was seized on the 31st with symptoms of a low peritonitis, doubtless of erysipelatous character, and also died”

In this history we may note how the contagion reproduced its exact kind, after a period of incubation of four or five days. Contagia, like seeds, require a fitting soil for their growth; they require a fitting air for their preservation. Seeds kept for a long time in ordinary conditions lose the power of germinating. If this is true of a body so highly organized as the seed, it would be likely to be true of the contagium, and such is the case. On the other hand, seeds kept under favorable conditions retain their life a long time. One variety of wheat largely grown in this country used to be known as Egyptian, because it had been grown from seed found in the closed and muffled hand of a mummy thousands of years old. It is on record that a chamber, in which a child had died of scarlet fever, after having been fairly cleaned, was closed. The family went abroad for a year. When they returned, a child was put to sleep in this chamber, and in seven days it sickened of scarlet fever.

That which has thus been said of contagium, may be summed up as follows:

1. It resides in definite particles; so small as to be invisible; so light as to be easily borne about in the air.

2. In chemical composition it probably closely resembles the fluids in which it exists.

3. It is largely reproduced in the system during the course of the disease to which it gives rise.

4. The poison thus reproduced is identical in nature with that to which it owed its origin.

5. It is rapidly destroyed when fully exposed to the atmosphere.

6. When not so exposed it may keep its power for a long time.

With regard to their action on the fluids in which they live, it may be said that they absorb oxygen, and give off carbonic acid, like plants; that they are remarkably independent of the chemical constitution of the medium which they inhabit, provided that they can get oxygen; and that they take nitrogen from any source which contains it, and use it in building up their own protoplasm. By various authors they are assigned sometimes to the animal; some times to the vegetable kingdom, the more general opinion being that they are of vegetable nature.

There is a somewhat constant relation between contagia and the forms of living organisms, known as bacteria and micrococi. This seems to be that in fluids which convey contagion, these organisms which are of such size as to be readily examined by the microscope, will presently appear, and that in proportion as they so appear, the contagious properties disappear. Whether the bacteria and micrococi are a further degree of development of contagious particles or not, does not seem as yet clearly made out. At any rate the bacteria do not exercise the noxious influence on the human organism which contagia does.

If any animal fluid, which when fresh conveys contagion freely, like the serum of peritonitis, remain exposed to the air until general putrefaction ensues, bacteria are found in

it in great numbers, but it is then slightly or much less contagious.

We will now consider how contagia produce the phenomena of disease. The eruptive forms are the type of infectious diseases; as a group they possess the following characteristics:

1. Each has a tolerably definite period of incubation.
2. The most prominent symptom common to all of them is the fever.

3. Each possesses a characteristic local lesion.
4. Each possesses a pretty definite period of duration.
5. Each, as a rule, occurs but once in a life time.

The possession of so many features in common can only be due to similarity of causation. These common features may be explained on the theory that contagium particles are minute organisms requiring for their growth and propagation, the same materials as organisms in general, but having other requirements and actions peculiar to them as contagia. The chief demand made by organisms in general upon the media which surround them are for nitrogen and water.

Now it is evident that the propagation in the human system of millions of organisms having such wants must lead to very serious disturbances, for nitrogen and water are the two substances which are most essential to the growth and repair of all animal tissues. While the number is scanty, the effect is slight; the system does not show it; by and by they become so numerous that the system begins to show disturbance; the stage of incubation is at an end, and the invasion of disease begins. This stage is marked by a rise of bodily temperature and an eager demand for water. The accepted cause of the high temperature is—since the days of Virchow—believed to be increased tissue metamorphosis or change. But what is the cause of this increased tissue change? Before the entry of the contagium into the system there is no fever; after it, fever is always developed;

the contagium is, therefore, the cause of the fever and its various phenomena. A leading characteristic of the contagium is rapid reproduction, and in this fact we find the cause of the fever, and of its distinguishing signs, namely, increased waste of the nitrogenous tissues; increased consumption of water; increased rapidity of the circulation, and unnatural heat. We know that there is increased waste of nitrogenous tissues in two ways: by emaciation, or actual loss of bulk in the muscles, and by the increased elimination of urea; the latter is a general though not an invariable fact, because in some cases of fever the urea, though generated, is probably retained in the tissues by reason of suppression of urine, or is modified, and we have increased excretion of products allied to urea in nature, namely, leucine tyrosine and changed hæmatine.

“The contagium is an organism. As such it largely appropriates nitrogen in its growth and propagation. The albuminous tissues and fluids are the only sources capable of supplying the quantity of nitrogen necessary for the enormous growth of millions of organisms.” There is no spare store of nitrogenous material for such consumption; it must be taken from that destined to the tissues, which must therefore lose whatever the contagium subtracts. Nitrogen exists in the body in three forms: in the albuminates formed in the stomach, and carried by the thoracic duct into the blood, to be appropriated by the tissues; in the tissues themselves; and in the product of the disintegration of the tissues. It is, therefore, constructive, fixed, and retrogressive albumen. I cannot here enter into the somewhat elaborate reasoning which shows that it is the constructive albumen which is appropriated by the organism of contagium; but the conclusion appears to be a sound and a necessary one, that the wasting which takes place in fever is due to the consumption of the constructive albumen by the contagium particles. This deterioration of the blood means impaired nutrition of

the brain; hence impaired nervous force: impaired nutrition of the stomach; hence defective digestion; while, at the same time, the great consumption of water by the developing organisms cuts off the supply for the secretions. Water is as essential to the nutrition of the tissues as nitrogen, and enters as largely into their composition. The growth of organisms, therefore, which largely consume water as well as nitrogen, will, in two ways, diminish the bulk of the tissues. Salkowski has shown that *during fever* there is increased elimination of potass, and diminished elimination of soda. After fever, diminished elimination of potass, and restored elimination of soda. The tissues which contain the potass are the muscles and the blood corpuscles, while the soda is mostly in the blood serum. The protoplasm of the contagium particles is built of the nitrogen and water of the blood serum, and has to take its soda with it; while the muscular tissues and the corpuscles, thus deprived of their supply of nutriment, perish by a rapid disintegration, the product of which is the potass, and the urea in the urine. The nutrition of the tissues takes place in the capillaries. The albuminates of the blood are elaborated in their course through the circulation to this stage; then the blood current is slowed, and its composition becomes unstable, ready to part with its nitrogen. On one side the albumen becomes fixed, while on the other it becomes unfixed. Decay and repair go on ceaselessly and simultaneously. On one side of the tissues the blood current is laden with constructive material, and on the other with retrogressive.

The moment at which the constructive albumen is undergoing the change which normally results in fixed albumen—that is, tissue—is that at which its nitrogen is most readily taken up by the contagium particles, which step in to appropriate that which should go to the tissues, while no such agency steps in to prevent the exit of the retrogressive albumen, which continues as before, and the blood being carried

by the increased rapidity of the circulation so much faster and more frequently through the urea-forming glands, the liver, and the kidneys, of course an increased amount is formed.

The increased action of the heart is due to the increased demand for nitrogen in the capillaries, to supply the doubled consumption by the protoplasm of the forming tissue, and the protoplasm of the developing and multiplying contagium organism, and this increased action produces increased retrogressive action, increased disintegration of tissue, increased formation and extrication of urea. The sequence runs: reproduction of the contagium, increased consumption of nitrogen and water, increased capillary blood-flow, increased tissue metamorphosis, increased elimination of excretory products. But some one of these doctors here is about to say that there is not always increased excretion of urea. This is true; but it is mainly true in the later stages of the febrile state, when, by reason of starvation, the constructive albumen is so diminished that it does not supply the demand from the contagium particles, which seize on the next most easily convertible form of albumen, the retrogressive, and consuming its nitrogen, cut off the supply of the urea producing glands. That this is sometimes one reason why a deficient amount of urea is excreted is probable, but it is not the only or the most prominent cause.

In many such cases it is sufficiently proved that there is an *excess* of urea in the blood and tissues; there is, in fact, more than usual; and this points not to a deficiency in the production, but to an impediment in the delivery. Bad cases of fever generally present, in symptoms, and, at the autopsy, close resemblances to those produced by advanced renal disease, as I have shown in my paper on the urinary organs in puerperal diseases. The existence of renal disease in those suffering from fever only increases the risk of defective elimination of excretory products, and the occurrence of so-called uræmic symptoms.

But suppression and uræmia sometimes occur in those whose kidneys are not, at the time of attack, supposed to be diseased; and many such persons recover and show no permanent disorder of the urinary function. In such cases the renal disorder must be held to be secondary to the fever, and evidently depends in some way upon the action of the fever poison. These cases generally show high temperature, great thirst, rapid pulse, delirium, convulsions, coma, scanty and high-colored urine, often albumen, renal epithelium and sometimes blood, the renal symptoms appearing only after some days of fever. What does this mean?

It means that there is a very large propagation of contagium particles, great consumption of water and nitrogen, rapid capillary change, excessive formation of excretory products, notably urea. We never find defective excretion of urea when the *quantity* of the urine is normal. The defect in excretion is due not to the lack of urea, but to lack of the water which must solve it and float it out of the system. The water has been withdrawn by the propagation of the contagium! Urea thus retained is an irritant to the kidney; it is, as our autopsy book shows, deposited upon the peritoneum, the pericardium, the pleura, and there sets up the serous inflammations of which we have unhappily seen too much in the past winter.

Dr. MacLagan thus sums up this condition: "The febrile state is *always* accompanied by increased *formation* of urea, by increased consumption of water, the two chief ingredients of urine. So long as the quantity of water at the disposal of the kidneys is sufficient for the purpose, there is *increased* elimination of urea. In some cases in which there is a large propagation of contagium particles, the balance is apt to be disturbed. There is great consumption of water in that way, and coincident great formation of urea. Like the Israelites of old, who were required to make bricks without straw, the kidneys have more than enough urea, and scarcely any water to form urine.

"If this abnormal state be not excessive, or do not continue too long, the difficulty may be tided over, with no more than an anxious and smart attack of fever, accompanied by scanty urine, but no very marked renal complication. If, on the contrary, the disturbance be excessive, and occur early in the attack, renal symptoms are inevitable, albumen appears in the urine, with casts and blood and uræmic symptoms, and the patient either dies or makes a very narrow escape." There are all shades and degrees of this process, as we know.

We have thus considered increased tissue changes as one sign of fever. The next named in order was increased consumption of water. Very little more need be said about this. I have only to remind you that organisms are very largely composed of water. Water is a portion in all their food. Their structure is built of nitrogen and water, three-fourths water. The carbon which is taken is burnt up in maintaining heat, or extricated in the bile and fæces, or sometimes deposited as fat. All growing organisms take food in fluid form. All seeds and bulbs will sprout in water. You can't feed babies on hardtack. Hence comes the intense craving for drink in fevered persons. They drink and drink again water which is not rendered back by the burning skin or the deficient urine. What becomes of it? It is consumed by the rapid propagation of germinal contagion in the tissues.

Increased rapidity of the circulation, named as the third sign of fever, is due to the necessity of increased action of the heart, caused by the great demands made by the process going on in the tissues, the rapid multiplication of the contagium organisms, and the rapid disintegration of tissue. This disintegration goes on also in the heart itself, malnutrition of its substance, and feeble as well as rapid action being present just in proportion to the degree of the fever—that is, just in proportion to the extent to which the development of the contagium goes on.

Since increased rapidity of circulation concurs with increased production of urea and increased degeneration of tissue, we see in the two the probable cause of the increased temperature.

Another factor, however, is indicated by what we know of the periods of active development. Thus the heat of plants rises just before blooming; perhaps because at such times the tissue change is rapid, and in the fabrication of solid tissue out of fluid nutriment the latent heat of the fluid state is given off. That this is no small amount, the farmer knows who places shallow vessels of water in the cellar, when the night is very cold, to protect his potatoes. Before the water can become solid, it must give off a thousand degrees of heat. Thus we see how the essential conditions of the febrile state, enumerated some time since, viz., increased disintegration of the nitrogenous tissues, increased elimination of urea, increased consumption of water, increased rapidity of circulation, and unnatural heat, are, on the basis of the germ theory, all the results of the rapid multiplication of organisms. No other theory with which I am acquainted shows so well how these occur.

We will now see how this theory accounts for other symptoms less constant and essential. Thus the rigor or sense of shivering which marks the invasion of disease coincides with an increased temperature, as shown by the thermometer, and increased rapidity of the circulation, caused by the development of the contagium, and results from a spasm of the minute arteries all over the body, a conservative effort of nature to shut off the morbid supply of the fuel to the fire thus enkindled. This attempt to limit the disease by cutting off its supplies continues for a variable period (from a few hours to a few days), and during its continuance there is a capillary torpor and a positive anæmia of the whole system, except its visceral portions, which produces the livid or ashen hue of the skin, the muscular tremors, the headache,

and, in some cases, even convulsions, even as it has been shown that sudden anæmia of the brain is the mode by which epileptic and hæmorrhagic convulsions are produced.

To the same cause is due the rachialgia and the arthralgia of the early days of fever. At length this state of capillary spasm passes off, and capillary dilatation follows; reaction more or less commensurate to action. Flush, heat, and injection replace chilliness and lividity, and restlessness supercedes pain; the earlier nervous symptoms now give place to delirium, caused by cerebral mal-nutrition dependent upon the great demands upon nutrient material which the developing organisms make, and when tissue disintegration has stored the blood with urea, which defect of water prevents the kidneys from eliminating, coma and uræmic convulsions may supervene; or, if the cardiac nutrition and the cerebral nutrition are equally depressed, coma and the typhoid state, ending in death by asthenia.

The changes noted after death correspond to this theory. They are: cerebral atrophy, diminished bulk of the brain tissue, serum being effused into the cavity of the arachnoid and ventricles to prevent that vacuum which, in the brain at least, nature abhors. Parallel with this is the softened and friable condition of the heart, chiefly on its left side, loss of bulk in all the voluntary muscles, softening and disintegration of the spleen. It will be noticed that the organs which are held up to constant work, like the heart and liver, do not shrink in size like the quiescent voluntary muscles, but they become soft and pulpy.

This theory derives further support from consideration of the method of treatment, which are approved by the best clinical experience. The two leading indications are to subdue the pyrexia and to maintain nutrition. The most effective means of subduing the pyrexia is by the direct application of cold, which checks the growth of the contagium organisms. Perhaps we have yet much to learn in the free

use of septicides, as salicytate of soda and carbolic acid, which out of the body and upon its surface are known to destroy organisms of low vitality. The other indication is simply to supply albuminous food to compensate for the consumption of nitrogen and water, by the growing organisms. This we do in giving freely milk and animal broths.

An organism which lives in and at the expenses of another organism is a parasite. Contagia, therefore, are parasites. We will consider them awhile in that light. All animals are liable to parasites, and the parasites of one differ from those of another. Man, the horse, the cow, the dog, the cat, and the rabbit, each has its peculiar parasitic enemy, not found in the other. Moreover, each parasite has its local home. One is found on the skin, one on the mucous membrane, one in the liver, one in the brain, one in the kidney. Each has a nidus, in which it is, and out of which it is not, reproduced. Thus we find that the distinctive features of each specific disease are certain local lesions of some tissue or organ. The locality within which the parasite finds the conditions necessary to its propagation is a limited one; beyond the conditions of growth common to all organisms, it requires for propagation something peculiar to itself, and that something is found only in a certain nidus. A coarse illustration of this idea we have in the shad, which roams the sea in common with unnumbered kinds of fish, but for its propagation it must find the shoals and sandy reaches of the fresh-water river.

For the production of the eruptive fevers, two factors are then necessary. The first is the contagium, and the second is the presence of that special, and probably localized condition which is essential to its fecundation and propagation, as distinguished from its organic growth. In virtue of this second necessary factor, we find explanation for the following characteristics of the eruptive fevers: (1) Their comparative rarity; (2) their characteristic local lesions; (3) their

different degrees of severity and contagiousness; (4) the fixed duration and the cessation of the febrile symptoms; (5) the phenomena of the crisis; (6) immunity from a second attack.

It is the lack of the adaptation between the germ and its conditions which causes the infinite majority of them to fail of reproduction, just as Lockhardt has computed, that a pig will eat 1,340 ova of the tape-worm before one will find the conditions necessary for its development into a bladder worm. A man has small-pox. An infinitesimal portion of lymph from one of the uncounted vesicles introduced into the arm of another person gives to one or more germ the chance of reproduction, but untold numbers must perish for the lack of such a chance. Nothing is more unstable than the molecular constitution of a germ except in its appropriate home. Of 10,000 set afloat in the atmosphere, 99 per cent. are devitalized by the contact, and 99 per cent. of the remainder fail of finding a nidus in which they may reproduce their kind.

Again: of each eruptive fever, the most positive characteristic is its local lesion. Of scarlet fever, the angina and the rash; of measles, the coryza, bronchitis, and rash; of typhus, the rash; of typhoid, the tumefaction of the agminate glands of the small intestines; of cerebro-spinal fever, the meningeal congestion.

Each disease will uniformly produce its specific lesion. The specific lesion of any one will never exist without other evidence of the presence of that individual disease. The contagium is represented in the lesion; as each parasite has its area in which it is propagated, so each eruptive fever has its nidus where its organisms are reproduced. This nidus will share, in common with all the rest of the body, the general effects of the presence of the parasitic organism. It will also have its own series of phenomena dependent upon its propagation.

Whenever in nature there is special formative effort, there is a special force, an increased vascularity, a heightened nervous endowment, a rapid interchange of molecular action. In all the higher animals fecundation determines an increased flow of blood to the maternal organs. In the flowering plant the heat of æstivation is marked. Such hyperæmia as the fecundation of thousands or millions of germs occasions, is adequate to produce the inflammatory mischief which constitutes the local lesion. The occurrence of a local lesion in connection with the eruptive fevers thus becomes an additional argument in favor of the view that the poisons of these maladies are living organisms. And, if this is the case, it is in the seat of the local lesion that the contagion should be found, if it can be at all detected, most abundantly.

We find that the local lesion of diphtheria has been carefully studied to the following conclusions: The poison of diphtheria is a parasite; the nidus, which is the second factor in the disease, is the mucous membrane of the air passages; the intensity of the fever and the extent of the local lesion are dependent on the same cause—the amount of the contagium reproduced; an abundant growth of contagium gives rise at once to a severe local lesion and severe constitutional disturbance. Oertel, Nassiloff, Von Recklinghausen, Klebs, Weber, and others substantially agree in the statement that the local lesion is essentially an infiltration of the affected tissue with granular matter found to consist of micrococci. At all stages of the disease, and in all the affected tissues, these organisms are detected. According to Eberth, without micrococci there can be no diphtheria; and according to Nassiloff, it is to the occupation of the lymphatics by masses of micrococci that the lesions of diphtheria are due. In like manner Orth, Hüeter, Lukomsky, and Von Recklinghausen have shown that the erysipelatous process is invariably associated with the presence of micrococci in the inflamed skin; and Orth that the infiltrating fluid of

the swollen parts contains an enormous number of bacteria, as well as the lymphatics and lymph spaces. Keber, Cohn, and others have demonstrated that the fluid of small-pox pustules contains minute organisms. Weigert found the same in the lymphatics, near the pustules, and declares their identity of characteristics with micrococci. Klein experimented with sheep-pox with the result of finding the recent lymph of the pustules—the primary pustules produced by the inoculation of that lymph, and the secondary pustules which followed inoculation—all contained numerous small, highly-refracting granules, exhibiting molecular movement, and, when kept at a temperature of 90° F., undergoing such changes as are seen only in organisms, and that the changes in the cuticle which constitute the specific lesion of the disease, are invariably associated with the development of these minute organisms in the skin. Klein also demonstrated that the bowel lesion of typhoid fever is associated with the development in the follicles of Lieberkuhn, in Peyer's plates, in the veins and the lymphatics, of masses of minute organisms.

The analogy of some other superficial lesions not associated with fever may be cited in this connection. In *tinia tonsurans*, in *herpes circinatus*, and in *favus* and *sycosis* we have the development of organic parasites of a larger variety plainly shown by the microscope. In that affection called *onychias*, or *run-around*, we have a dissecting ulceration which raises the cuticle around the circumference of a circle; the microscope shows that the fluid in the ulcerating groove contains germinal bodies, and clinical experience has long ago shown that the disease is certainly arrested at once by touching the groove all round with a septicide like iodine or carbolic or sulphurous acid.

The different degrees of severity of the same form of fever would, according to this theory, be explained by supposing that the second factor, or the *nidus*, exists in very different degrees in different individuals.

The cessation of the symptoms and the immunity from a second attack are the consequences of the exhaustion of the pabulum which exists in the nidus, and the definite duration of the febrile symptoms has the same solution. The disease will be in proportion to the food for it, and, be it much or little, it will be exhausted in a certain period. If there be much food there will be much propagation; if there be little there will be less propagation. In any case the propagation will continue while the food lasts, and the greater or less amount is consumed by the greater or less amount of contagium organisms to which it has supplied the conditions of existence.

So, also, with the phenomena of the crisis, with the cessation of the propagation of the organism there is a sudden change of conditions. The abnormal demand for water ceases; the organs and tissues are allowed to appropriate all that is sent to them.

But prior to the cessation of the demand there has probably been taken into the system more water than is requisite for its own wants, the surplus being that which would have been required for the contagium if its reproduction had not ceased. Of this surplus the system relieves itself by perspiration, diuresis, or diarrhœa. The extent of the critical flow is, *cæteris paribus*, directly as the quantity of the surplus. Increased consumption of water is one of the chief phenomena of the febrile state; increased elimination of it is the chief feature of the crisis. In the former it results from the growth of the contagium; in the latter from the sudden cessation of that growth.

It is well known that all the contagious fevers are not equally contagious. Small-pox is more contagious than typhus—typhus than typhoid—while cerebro-spinal fever is very slightly contagious. This fact can not be explained on any view which regards the blood only as the field in which the contagium is reproduced. Each contagium can with

equal facility gain entrance to the blood. If that were all that is required, all the forms would be equally contagious and communicable.

The contagiousness of a fever depends on two things: first, on the quantity of contagium which passes into the surrounding atmosphere from the bodies of those suffering from it; and, second, on the readiness with which the contagium thus eliminated reaches its second factor in the systems to which it gains entrance. The more numerous the contagium particles in the atmosphere of a room, the greater the chance of one or more of these particles being inhaled by those who breathe that atmosphere. The seat of the local lesion is the seat of that fecundating action which follows the contact of the contagium with the second factor and results in its propagation. Hence the contagium is most abundant in the seat of the local lesion. The poison of small-pox is found chiefly in the pustules of that disease; of scarlatina, in the desquamating cuticle and the throat discharge; of typhoid fever, in the alvine discharges. Hence the contagiousness of each must, to some extent, depend on the seat of the lesion. From the bran-like epithelium of the skin and the throat the morbiferent particles are blown with every current of air and every expiration. Hence these diseases are highly contagious. When the emanations from the seat of the lesion do not readily reach the surface, contamination of the air is less certain. Thus the debris of the lesion in typhoid fever are delivered only in the stools. Hence, as is well known, local contamination of drinking-water, milk, etc., is the common mode of the propagation of typhoid fever. In cerebro-spinal fever the debris of the lesion can not reach the surface directly, hence the extreme rarity of contagion in this disease. In other words, that fever in which the local lesions expose the largest surface to the atmosphere will be the most contagious, and *vice versa*.

The evidence which supports the germ theory of disease

is supported by what we know of relapsing fever, a fever without characteristic local lesion. In 1868, Obermeier discovered in the blood of those suffering from relapsing fever a foreign organism having the appearance of minute spiral fibres. These are never absent during the fever, but speedily disappear after the new effervescence. Of this discovery Lebert says: "That a parasite so clearly determined as this, and never found thus far in any other disease, must be closely connected with the development and spread of the affection is hardly to be doubted." The characteristic of relapsing fever is the relapse. There is a febrile attack of six or seven days' duration, then an interval of a week free from fever, then another fever fit of shorter duration, then another interval, which is generally parmanent, but there may be as many as four or five relapses." During each period of fever the spirilla, as it is called, is found in the blood, and during each apyrexia it is absent. The fever must then be the product of the organism, or the organism must be the product of the fever. The latter can not be, for, in the character of a febrile paroxysm, it does not seem to differ at all from the fevers in which no spirilla is produced. The organisms must then be the cause of the fever. The characteristic of the fever has been said to be its relapse. To this it should be added that one attack gives no immunity from others. The explanation of the relapse is seen in connection with the fact that the organism produces no local lesion, and is found abundantly in the blood itself. The second factor then resides in the blood. The organism is propagated in the blood, and its propagation exhausts the blood of that specific something, which is the material in which the contagium finds its nutrition. When its pabulum is thus exhausted the contagion ceases to be propagated, and for the most part dies. Hence, the fever ceases. Directly the pabulum accumulates again in the blood. In a week a sufficient quantity is present to stimulate renewed propagation of the contagium, and the blood is shortly again exhausted. Many cases occur

in which from rapid elimination of the first factor, or tardy reproduction of the second, there is no relapse. Murchison has collected 2425 cases, in 724 of which there was no relapse. Litten records 400 cases; 396 had a first; 142 a second; 7 a third; 3 a fourth.

The mode is the same. In each case the second factor was reproduced before the first was fully eliminated. The oftener the exhaustion of the blood is repeated, the more tardy is the reproduction of the second factor, and thus there comes by-and-by a time when the elimination of the germs is complete before the reproduction of the nidus is established.

Each successive attack is shorter and milder than the preceding one, because there is less and less of the second factor.

Litten gives for duration of—

1st attack.....	6.6 days
2d " 	4.9 "
3d " 	3.1 "
4th " 	3.1 "
5th " 	2.3 "

It is further probable that an organism whose nidus is in a constantly renewed and changing fluid, like the blood, may fail to make a permanent exhaustion of its pabulum, as an organism whose nidus is in a fixed tissue does; hence, relapsing fever may not be like other fevers, in the fact that one attack secures no immunity from a second. That time alone, without the actual occurrence of disease, exhausts the pabulum of some diseases, is evident from the fact that persons who reach a certain age without contracting these diseases may be considered practically exempt from danger of contracting them. Thus, tonsillitis, scarlet fever and typhoid fever never attack the aged.

Thus, the theory which attributes the phenomena of febrile disease to the growth and propagation in the system of minute parasitic organisms explains so many, so varied, and sometimes so apparently contradictory facts, that it must be regarded as more complete and satisfactory than any other yet offered.

ART. II.—*Solid Food in Typhoid Fever.* By S. D. TURNER, M.D., of Circleville, Ohio, Professor of Diseases of Women and Children in Starling Medical College, Columbus, Ohio.

All authors, I believe, unite in condemning the use of solid food during the course of typhoid fever, or in the earlier stages of convalescence from this disease. They point out many dangers from its use—indigestion, mucous enteritis, aggravated diarrhoea, hemorrhage, and perforation of the bowels.

Twenty-five years ago they were yet more rigid in their dietetics than they are to-day, giving their patients only solutions of gum, watery broths, or very dilute preparations of farinaceous foods.

Early in my practice I was struck with the similarity between many of the symptoms of the latter stages of grave typhoid fever and the effects of imperfect nutrition. I was led to believe that a sick man might be starved to death, and that some of the deaths attributed to this disease might be due to destruction of organs from unsupplied waste of tissue, that is from a process of slow starvation. A more liberal use of nutritious fluid foods, rich soups, beef tea, egg-nog and milk, by the greater mildness of the symptoms, the shorter continuance of the disease, and the increased number of recoveries, confirmed me in this belief.

Over twenty years ago I somewhere met a brief allusion to the value of solid food in typhoid fever, by Dr. Hooker, of Connecticut, now deceased. It was a mere hint, embedded in some article not strictly relating to this subject, and from the universal silence of the profession, it seems to have fallen unheeded. I am unable now to find the original publication, but his idea, as elaborated by myself, is this: As early in the disease as possible, before the stomach has lost its digestive power, the patient is to be given a substantial diet of plain, solid food, such as beef, mutton, roast potatoes, and toast, three times a day, at his usual hours of eating. The food should be well prepared and made as appetizing as pos-

sible. Little or no fluid is to be used during the meal. Notwithstanding the loss of appetite and aversion to food, the patient is urged to eat, if only a few mouthfuls. The habit of eating is to be kept up. In the course of three or four days the loathing ceases, the patient readily takes food, and frequently anticipates his meals with pleasure and enjoys them with positive relish, *pari passu*, the gravity of the symptoms subsides, and the disease running a mild and regular course, the patient convalesces at the end of the third week with scarcely any other therapeutic means.

As this was but an advance upon the line of my treatment, and as my own reasoning and observation had brought me almost to the same point, I adopted the practice, and after an experience of more than twenty years I think I can safely say that the dangers of solid food in typhoid fever are exaggerated or fanciful, and that there is no method of treatment of this disease, at least as it occurs in private practice, so satisfactory to the physician and so successful in result as this of Dr. Hooker's.

Contrary to the established belief, my experience teaches me that solid food, in this disease, is never an irritant; that it does not increase fever, nor cause indigestion, gastro-enteritis, aggravated diarrhœa, ulceration of Peyer's glands, hemorrhage, or perforation of the bowels. So far from this, solid food, when properly administered, is thoroughly and easily digested, and is a preventive of these accidents. I have every reason to believe, then, the irritation of Peyer's plates stops short of ulceration under its use.

In regard to the digestion and assimilation of the food, I can not be mistaken. In the many cases I have pursued this method, the food has in no instance been rejected from the stomach, the diarrhœa has ceased, and the fæcal discharges have become regular, semi-solid, and have borne all the characteristic appearances of healthy fæces. The food must then have been digested, absorbed, assimilated,

subversed the purposes of the economy, gone through the various stages of retrograde metamorphosis, and appeared at last in the excreta.

No one can fail to see the importance of thus maintaining the integrity and physiological activity of the digestive organs. The habitual secretion and subsequent resorption of pounds of saliva, bile, gastric, pancreatic, and intestinal juices can not be abruptly arrested without injuriously disturbing the whole animal economy. Such arrest must be a predisposing cause of local congestions and of vitiated secretions, which directly or indirectly aggravate already existing irritations, and increase the dangers of ulceration, hemorrhage, and perforation.

The use of solid food alone will maintain these functions in their full physiological vigor. A mistake is made in looking upon fluid foods as more digestible than solid. Solution and digestion are not equivalents. Digestion is a vito-chemical process—the results of the reaction of the various digestive juices of the alimentary tract—upon the food. For the secretion of these juices, the process of mastication or of suction, and the rough contact of the semi-solid mass with the secreting surfaces, are necessary. This “roughness” is also necessary to excite the rythmic movements of the stomach and intestines, a movement essential to sound digestion and absorption. When fluid food—which is but the physical separation of the nutritive particles, and their distribution through a solvent—is exclusively relied on, the secretion of the saliva and other digestive juices is imperfect, and there is not sufficient stimulus to the muscular walls of the intestines. The solvent is taken up by the veins, and the undigested pasty residue suffers unhealthy fermentations and becomes a source of irritation.

Experience and reason both thus teach that the regular use of solid food in typhoid fever best preserves the integrity of the digestive functions, prevents local congestion of the

chylo-poietic viscera, saves the irritation of vitiated secretion and unhealthy fermentation, enriches the blood, and restores tissue disintegration.

It is impossible to over-estimate the advantages to the patient of this constant supply of assimilable nutriment, and the consequent maintenance of the integrity of the various organs—especially those organs whose functional activity are necessary to eliminate the poisonous results of retrograde metamorphosis. It places the whole system in the most favorable condition for resisting the destructive attacks of the fever, and supports and sustains until this self-limited disease has run through the various stages to its ordinary termination in health.

I do not wish to be understood that solid food is to be relied on to the entire exclusion of any other therapeutic means. It is only the essential factor in the treatment. At the outset, quinine in liberal doses clears up the diagnosis, and moderates the intensity of the fever. Opium is indicated to relieve pain, to give rest, and to control excessive diarrhœa. In grave cases, a mixture of chlorate of potassa and iron is a valuable tonic and hæmatic; but, in ordinary cases, the indications for medicinal interference almost entirely ceases by the middle of the second week. As a rule, by this time, the appetite has returned, the diarrhœa has ceased, the fever has moderated, and the patient, if delirious, is restored to reason.

It is difficult to make just comparisons of different modes of treatment of disease, as the varying gravity of the affection and the surroundings of the patient very materially affect results; but I am convinced that the mortality in this method of treating typhoid fever will compare favorably with any other. Not more than one case in twenty-two, in an aggregate of nearly two hundred cases, has died.

The method of Brande has, in some hands, shown as good a record; but aside from the fact that his method is still

upon trial, and some reports are very far from being as satisfactory as those of Wunderlich and other advocates of the hydropathic treatment, however suitable it may be in hospitals, from want of proper facilities and difficulty in procuring skilled attendants, can never be made generally available in private practice. But there is nothing incompatible in the two methods, and in exceptional cases, when the increased temperature becomes a source of danger, the food treatment can be supplemented, if deemed necessary, by the cold bath. With the use of solid food, the fever generally terminates very exactly on the 21st day, ordinarily shading off from the end of the first week, until the thermometer at that time indicates no increased temperature. Full convalescence is prompt, as the patient is not emaciated and exhausted by excessive wasting discharges. In no instance in my experience has death come from diarrhœa, hemorrhage, or perforation of the bowels; and this alone, I think, is conclusive evidence that solid food is not an irritant in typhoid fever.

The success of this treatment will depend much upon the character and faithfulness of the attending physician. He must have a clear appreciation of its value, and early in the disease must be able to impress its importance upon the patient and his attendants. There must be no evasiveness, no broad latitude, no "about" in his direction, in regard to quality and mode of taking food. The directions must be precise and full, and he must insist upon a strict compliance with his orders. It is much easier to dose the sick man with drugs than to overcome his loathing of food, and for the first few days it will require all the authority of the physician to induce him to eat. But restoration of the appetite comes with the end of the week, and the dangers and difficulty are then over.

As this mode of treatment, to a certain extent, requires the intelligent consent of the patient, it is not as applicable

to young children as to adults. They can not be readily induced to eat. It is in this class of persons, therefore, that, in my experience, the disease ordinarily assumes its graver forms. Not that the mortality is larger—for the restorative powers of youth are greater than in advanced life—but the unpleasant symptoms are more pronounced, and the disease runs a more irregular and indefinite course.

It is in these cases that milk has a peculiar value. Milk is often classed among the fluid foods; but, as it coagulates and assumes a semi-solid consistence in the stomach, it does not properly belong to this class. It would probably be equally as efficient in the treatment of typhoid fever with the more solid food, if, in the act of taking it, it required mastication, and if the residue more actively excited secretion and rhythmic movement. Being highly nutritious, and containing all the elements of repair of tissue, it is an excellent addition to the more solid diet, and can, with advantage, be combined with this in the adult, especially when the patient's appetite has returned. But milk alone can not take the place of solid food.

ART. III.—*Prophylaxis of Summer Complaints in Children.* By CHARLES W. OLESON, M.D. A paper read before the Columbus Academy of Medicine.

I would like to call the attention of the Academy this evening to a brief consideration of the prophylactic treatment of the summer complaints of children. I use the term summer complaints advisedly, as I do not intend to discuss the great diversity in the nomenclature of these diseases, which is too often based upon the opinions of individual writers rather than upon pathological appearances.

Let any one, curious in the matter, examine a dozen treatises upon children's diseases, and see how opposed are the views of German, French, English, and American writers upon this subject—a difference in belief as to causation, clini-

cal history, and characteristic lesions only equaled in diversity by their judgment as to what is the treatment required.

From the necessarily limited scope of this paper, the consideration of these important afflictions of the child's early life will be confined to an examination of their usual character and apparent cause, and to a recital of such agents, both dietary and medicinal, as shall appear best calculated to shield and protect the child.

Character.—The manifestations of these diseases are very different in character, both as regards the gravity of the attack and its course. We have in these *manifestations* all the varieties of gastro-intestinal disturbance.

A physician, upon entering his office on some summer morning, may find awaiting him a group of children, and upon inquiry may find that all are suffering from some form of derangement of the natural action of the stomach and bowels, and he may also discover that each differs in the amount or character of the disturbance from the others. One may be quite bright and playful, and only seek relief from a tendency to vomit its food. A second will have watery movements of an offensive character, with a cool, pale surface, and marked nervous prostration. Another may have simply frequent discharges of partially digested food, without apparent constitutional disturbance. Yet another has a depressed fontanelle, great restlessness, constant vomiting on receipt of nourishment or drink, while the passages will be grass-green in color, with bits of contained mucus and patches of bright blood. While still another, lying pallid in its nurse's lap, cold and clammy in collapse, its skin hugged to its bones, its sunken, staring eyes already dulling for its last sleep, has an appearance which, however familiar it may become, never shocks one the less.

From so simple a condition as hardly to demand attention to a consummation so grave as to startle all, the disease, unless cared for, is apt to remorselessly proceed.

The first departure from a state of health is undoubtedly an excited, abnormal sensitiveness of the nerves supplying the mucus membrane of the alimentary canal. This continuing, may give rise to marked increase in the disturbance until cerebro-spinal and sympathetic systems are alike involved. Following this comes lessened vitality and changes in the secretions, both in character and amount, and what was early a simple error in innervation becomes a very serious disease, difficult to treat, and of doubtful prognosis.

Causes.—What causes these conditions? What agents are active in shaping these diseases, which are of so serious a character as to carry off seven-ninths of the children under four years, dying in our four hottest months.

Frequently this can be traced to improper sewerage, insufficient ventilation, and the other recognized sources which contribute so plentifully to the generation of disease. But with these improved or removed, there are still factors producing these diseases, as potent for evil in our avenues as in our alleys, and which must be heeded and cared for if we are to furnish our little patients, in all conditions of life, suitable protection against ever-threatening evils.

In the discussion of this part of my paper, I shall supplement my statement of my belief as to these causes by the mention of what I deem the best measures to be taken for their prevention or relief.

1. *Proper alimentation.*—Every doctor experiences a sense of decided satisfaction in practicing in those families where the mother nurses the babies, and a corresponding anticipation of impending trouble where, from incapacity or other cause, artificial feeding is required. Where a child has the benefit of its mother's milk, and the child is well nourished thereby, the consideration of its alimentation becomes a minor affair. But there is an unfortunate class who are doomed to artificial feeding. So large is this class that the preparation of food for infants has become a business in

itself, and scores of preparations are in the market, with captivating names, and accompanied by testimonials so encouraging as to their ability to nourish, that they are eagerly sought by anxious parents, notwithstanding their value as food is by no means established. Being proprietary, their constituents are secret, and so but few physicians care to trust the issues of life and death to a sense of honor and responsibility which is purely mercantile. Our best substitute is in cow's milk, and with this carefully procured and suitably prepared, we have that which is, physiologically and chemically considered, a nearly perfect food, and the only one necessary or advisable until the child's molar teeth appear. My favorite method of preparing this substitute is as follows:

A young healthy cow with a young calf should be selected. If she is an Alderney or Holstein, so much the better, for their milk is very rich in cream. Some from each milking of such a cow should be set aside in a crock; after the cream has risen well, skim off the upper third, taking some milk with the cream; dilute this with one-third its bulk of pure water, and sweeten in the proportion of a teaspoonful of loaf sugar to a half-pint of the prepared milk. Should this constipate, brown may be substituted for the white sugar, or a little oat-meal may be boiled in the water before being added to the milk.

Dr. Dawson and Prof. Jacobi recommend substituting rich barley water for the water with which the milk is diluted. Proper attention to all these steps is necessary, and often what is apparently a slight unimportant departure from this formula will be sufficient to nullify the whole. A babe may thrive upon one cow's milk, and sicken upon that of two, while the substitution of the milk of an old cow may cause serious disturbance in the digestion of a child that was doing well on a young cow. This condition as regards age must be kept up, and should a child become ill when using milk from a cow to which it had been accustomed, I

should presume a change to a younger cow was indicated. This course pursued, and the child rigorously kept from the family table, trouble from its food is quite improbable.

Excessive Heat.—More potent than improper alimentation, even in causing disease of the alimentary canal in children, is insufficient protection from the excessive heat which we have during our summer months. This has been noticed and considered by most practitioners, but Dr. Davis, of Chicago, has more particularly investigated this subject by the aid of health report statistics, and has been able to show the terrible coincidence of excessive heat and infantile mortality. After twenty-five years of observation he has been led to regard the first week of continuous hot summer weather that, occurs after the middle of June, as developing the beginning of the bowel affections of children for that season, with as much certainty as any event in nature. I quote his words: "In the city of Chicago, June, 1874, in the week ending the 13th, with a mean temperature of 80° Fah., there was one death from cholera infantum; in the week ending the 20th, with a mean temperature of 72° Fah., there were three deaths from cholera infantum; but the next week the temperature ran up to 80° Fah., and there were forty deaths from cholera infantum. In the same month in 1875, from the 1st to the 19th, the range in temperature was about 64° Fah., and with but four deaths in the nineteen days; in the next week, with a temperature of 70°, there were thirteen deaths from cholera infantum. Of the 1,796 deaths occurring from affections of the bowels alone, 1,339 were from summer complaint. Of these 1,339, 1,206 died in July, August, and September; 71 more died in June, and 34 in October, leaving only 28 deaths in the other seven months."

Dr. Davis is satisfied that 90 per cent. of the cases of serous diarrhœa and cholera infantum have their beginnings between the 20th of June and the 20th of July of each year.

How shall we counteract this tendency? By cooling well the child's sleeping room, protecting its head from the direct rays of the sun, by administering cooling baths and drinks, and by well-advised and judicious exercise in the open air, in a not too exposed situation. In addition to this, Dr. Davis recommends "that when the temperature of the evening continues above 70° beyond eight o'clock, that the whole trunk be enveloped in a towel wet in cool water, and left to dry out well through the night."

3. *Dental Irritation*.—While many dispute the assertion that the irritation of the gums during dentition is at all liable to cause any disturbance of the general nutrition, or any sympathetic abnormal action of the alimentary canal, another class, with equal opportunities for observation, as confidently assert their opinion to the contrary. During the summer months cases are frequently seen in which attention having been previously given to the proper alimentation and thermometrical protection of the child, the vomiting, diarrhoea, and nervous disturbance still continue.

How can we account for this upon any other hypothesis, especially when we find the gums tense and livid, and suitable attention to them is rapidly followed by relief of the trouble. Instead of being a purely natural process, devoid of any injurious tendency, I believe it to be a prime factor in the genesis of these summer complaints.

To relieve this tendency, I have employed, with constantly increasing satisfaction during the last seven years, a treatment recommended by Dr. Caro in a paper read before the New York County Medical Society. While this treatment may be familiar to all, yet so important is it that I will read what he says upon this point, for if there is one of my hearers to-night to whom it is not known, the time will be well spent:

"In the most severe cases of odontitis, either with or without ulcerated gums and loosened bowels, I have never failed

to relieve the child by the local application of brom. potass. Almost immediately after the first rubbing on the gums, from being turgid, swollen, and red, they assume their natural color, and a certain amount of ease is felt. Saliva commences to dribble, and, as if by enchantment, agitation, carpo-pedal involuntary motion, vomiting, and looseness of the bowels disappear. As the vomiting and diarrhœa in this case are not the consequence of gastro-enteritis, but of an excitement of the stomach and the intestinal mucous membrane, owing to the inflamed condition of the gums, I suppose it will never be cured either by the scarification of the gums, or by astringents or anodynes, as well as by brom. potass."

While I find this most satisfactory, I cannot agree with Dr. Caro as to the rapidity of the relief, and so in cases where there is no time to lose, I draw my gum lancet over the gum, cutting down to the tooth, and then give the bromide as supplementary treatment.

I have rapidly glanced at the agents most active in causing the departure from health in these serious and common complaints, and have directed attention to the measures applicable to their relief. Besides these measures I have resorted to medication but rarely, except in the case of one drug, the potass. bromide. This drug seems particularly adapted to the hyperæsthetic condition in children, and decidedly so when there is a tendency to irritation of the mucous membrane with increased secretion.

Different writers, commenting upon the bromide, give its action as follows:

Laborde says: "It exercises a predominant, and, to a certain degree, an elective, action on the nervous system, and especially upon the phenomena of reflex action."

Clarke and Amory say: "It is a vascular and nervous sedative." "Its primary effect in passing out of the system is to diminish all the secretions save the urine."

Bill, U. S. Army, says: "It is an anæsthetic to the nerves of the mucous membrane, and a depressor of their action."

Bartholow recognizes "diminution of sensibility of mucous membrane, which he considers is in part due to a local action of the salt in being eliminated."

So great has been my confidence in it as appropriate treatment to the conditions present in the outset of these diseases, that I administer it on their appearance from whatever cause, even going so far as to recommend my patrons to have a solution on hand, and upon the appearance of restlessness in the child order this sedative to be used. This is a solution of the bromide in syrup and water, so compounded that each teaspoonful represents one grain of the salt, the dose necessarily depending upon the age and susceptibility of the child.

As an adjunct to proper alimentation, protection from the effects of great heat, and supervision of the process of dentition, it acts as well as we can expect any one drug in any one condition.

CLINICAL RECORDS.

ART. IV.—*Case of Synovial Bursa of the Hyoid Bone—Pharyngeal Tumor treated by Incisions and Injections through the Mouth—Cure.* By CLINTON WAGNER, M. D., Physician to Metropolitan Throat Hospital, New York.

Mrs. S., aged 37, a native of New Jersey, consulted me, February 2, 1877, for hoarseness. She stated that between three and four years ago, she first noticed her trouble, which began with a tickling in the throat and slight cough. These symptoms increased, and at times she was conscious of a feeling of pressure internally, and upon the left side of her throat. About two years ago, the external swelling made its

appearance. Her suffering, at no time, has been great, her annoyance arising chiefly from inability to sing; her voice became rough, and the formation of the higher notes quite impossible. On examination, I discovered a swelling, about the size of a walnut, lying over the thyro-hyoid space, and which imparted to the finger the feeling of a fibro-cystic tumor.

A laryngoscopic examination revealed a large tumor at the base of the tongue, resting upon the superior and posterior surface of the hyoid bone, and extending from the lateral wall of the pharynx on the left, from which it appeared to take its origin, to beyond the median line, pressing the epiglottis backwards and to the right side; the left ventricular band was pushed beyond the median line, and the left vocal cord could not be seen. Whilst to the eye it presented, in the mirror, the characteristics of a cystic tumor, to the touch it seemed dense, firm and resisting.

The external tumor I regarded as either an enlargement of a small superior lobe of the thyroid gland, which sometimes fills the space between the thyroid cartilage and hyoid bone, or as a bursa which is occasionally seen at the acute angle of the thyroid; but I could not satisfy myself that there was any connection between it and the internal tumor.

After a consultation with Drs. Asch and McBurney, I determined to incise the pharyngeal tumor. This was done with the curved laryngeal sharp-pointed knife, by aid of the laryngoscope. The incision was made at about the center of the part exposed to view, from which escaped, with a spurt, as nearly as I could estimate without actual measurement, about two and a half ounces of a clear, amber-colored fluid, resembling synovia. The external swelling disappeared simultaneously with the collapse of the pharyngeal tumor, establishing the fact of the communication between them. I was prepared to employ the galvano-cautery loop, in the event of the mass proving solid instead of cystic.

A chemical and microscopical examination of the fluid was made by Prof. J. N. S. Arnold, with the following result:

“*Chemical*.—Reaction neutral; white precipitate on boiling; dense precipitate with nitric acid; precipitate, with acetic acid in small quantity, the deposit being redissolved on the addition of an excess of the acid, therefore, no *mucine* present, but paraglobulin exists in considerable quantity.

“*Microscopical*.—Flattened epithelial cells, with large nuclei in large numbers, and of various forms; leucocytes; red blood globules; compound granulation corpuscles.”

The sac refilled within a week, and I repeated the operation. The patient was requested to call at the expiration of three weeks, at which time the distension was apparently as great as before the first operation. An incision was again made, and the fluid allowed to escape. I then injected fourteen or fifteen drops of the tincture of iodine, by means of a hypodermic syringe, such as is used by veterinary surgeons, and to which I had attached a long, fine tube, bent to the laryngeal curve. Before discharging the iodine, I introduced the point of the syringe through the opening made by my knife, and directed it downward and forward to the hyoid bone. This operation I repeated three times, at intervals of fifteen, ten, and twenty-one days. Five weeks after making the last injection, no trace of the tumor remained. With the removal of the pressure upon the left side of the larynx, the parts resumed their proper places, the left vocal cord became visible, its action was restored, and the hoarseness disappeared. The hoarseness was due to irritation from pressure of the external branches of the laryngeal nerve, and the inability to give the higher notes, from want of action of the crico-thyroideus muscle supplied by the same nerve.

This case is remarkable on account of the pharyngeal tumor; bursæ mucosæ on the thyroid cartilage, at the point known as the Pomum Adami, are occasionally met with; bursæ

synoviae of the hyoid are more rare. Cohen (Diseases of the Throat) mentions a variety found in the structures at the root of the tongue, which he calls the supra-hyoid bursa, situated on the upper border of the hyoid bone, between the posterior insertions of the genio-hyoid and genio-glossal muscles. It appears to be abnormal, and is only occasionally met with. He does not state that an internal tumor exists in these cases, nor can I find mention of this complication in any of the authorities whom I have consulted. In regard to the treatment of this variety of bursa, internal incision and injection have an advantage over the external treatment; the patient escapes a troublesome fistula and an unsightly scar.

53 WEST 35TH STREET.

ART. V.—*Cancer of the Bladder and Prostate.* By G. B. BALCH, M.D., of Yonkers, New York.

P. De F., aged fifty-seven years, was for many years an excessive user of alcoholic liquors. In June, 1875, he first began to have some pains above the pubis, with frequent desire to urinate, the stream being small; the pain was dull and heavy, but after urinating was quite severe.

Sudden desire to urinate, with dribbling, has occurred since May, 1876. The desire was so severe and sudden at times that it was impossible for him to find a place of seclusion. On the 20th day of September, with urgent call to urinate, blood spurted from the meatus urinaris, and, apparently, without being mixed with urine, very little pain accompanying the hemorrhage. After this, bloody urine continued to be passed and dribbled from him. When in a recumbent posture, the dribbling was constant; when in an erect or sitting posture, he could retain it and pass it naturally.

On the 5th day of October, 1876, I was first called to see

him; he had just had a severe hemorrhage. I found him pale and weak, with an anxious expression of countenance. An examination revealed an enlarged prostate that was exceedingly tender. On attempting to catheterize him he complained of the instrument hurting him so very much that I desisted, there being no urgent symptom that called for it. In the use of this instrument there was no force used, and not one drop of blood was drawn, and it could not have passed further than to the prostatic portion of the urethra.

There was no interruption of the stream in urinating; no pain in the head of the penis, or pricking sensation in any part of the urethra; no priapism; no enlargement of the penis or elongation of the prepuce, or prolapse of the anus. After a thorough examination, my opinion was given that there was a malignant condition existing at the neck of the bladder. About the first of November he ceased to have blood in his urine. The urine continued to dribble, and he passed none naturally. He lost his appetite at the time of the first hemorrhage, and never regained it; he continued to emaciate and lose strength.

November 15th he began to have bleeding from the mouth and nose, which continued to the end. On the 25th of November purpuric spots were noticed upon the lower extremities. He died on the fourth day of December, 1876. The treatment was iron and quinine, moderate stimulants, and carbonic water and milk for drink and nourishment.

His grandfather, on the maternal side, had osteo-sarcoma of the lower jaw. Autopsy six hours after death. The abdomen and lower extremities were covered with purpuric spots, the body was very much emaciated. The bladder contained about 8 oz. of clear, healthy urine. The peritoneum was quite adherent to the bladder, except a small part of the fundus. In that part connected to the bladder there were many small tumors about the size of a pea, and many of the same tumors could be seen in the walls of the bladder.

On opening the bladder its posterior and lateral walls were found very much thickened and infiltrated with these small growths. The prostate gland was very much enlarged and filled with this material. The mucous lining, particularly of the neck and lateral portions, was thickly studded with small tumors, from the size of a small Brazil nut to that of a small pea. The larger ones were located near the orifice of the urethra, and looked very much like organized blood clots; the others shaded off to almost white in the smaller ones. The ureters were enlarged, and were somewhat obstructed by these tumors where they entered the bladder. The kidneys were slightly fatty, and in the left was a dark hemorrhagic spot. The liver was slightly enlarged, but quite healthy in appearance. The rectum and other bowels were healthy. The thoracic cavity was not examined for want of time.

A microscopic examination has been made, and demonstrated the morbid condition to be encephaloid sarcoma.

A.T. VI.—*Intra-Thoracic Cancer*. By J. H. POOLEY, M.D., Professor of Surgery in Starling Medical College, Columbus, Ohio.

On the 15th day of March, 1877, I was requested to see Miss C., æt 59, of whose case I received the following history: She had been sick for about three years, complaining of cough, pain in the chest, and gradual loss of appetite and strength. Simultaneously with, or a little later than the beginning of, her other complaint, a tumor had made its appearance on the left side of her neck, which, six months before my seeing her, had softened on the surface and had been opened by a physician, who supposed it to be an abscess, but nothing flowed out but blood and a little thin watery fluid; it has remained open ever since, and several other tumors, presently to be alluded to more particularly, have since made their appearance. She has been under the care

of several physicians, but nothing that has been done for her has been of any service, except that a year before, her cough, which was very severe, was benefited by some prescription of a homœopathic physician, and has never been so bad since. Family history good, free from cancer.

I found her in bed, considerably emaciated, with an expression of painful anxiety upon her countenance, but she said she had no pain anywhere, only a difficulty of breathing, and occasional cough, with almost complete sleeplessness, loss of appetite, distressing weakness, and a pruriginous or papular eruption over the whole surface, the itching of which tormented her beyond measure, and had caused her to scratch in such a way as to have marked her whole body and limbs with her nails. Though she was pale as well as thin there was no sallowness of hue, nor so-called cachetic appearance. Her pulse was one hundred, temperature normal, respiration, when quiet, very little quickened, but the least exertion made it very rapid and disturbing.

There was dullness on percussion over the front of the chest extending from the top of the sternum, and for two or three inches on either side of it; heart sounds weak and indistinct; breath sounds normal and somewhat puerile, or exaggerated on both sides. She had a rather troublesome cough, but very little expectoration, and that of a thin mucus. The tumor on her neck, already alluded to, was situated about the middle of the left lateral cervical region, as large as an orange, round, uniform, unlobulated, with a large, irregular crater form opening on its summit, with ragged, undermined edges, and the cavity filled with very irregular granulations with deep depressions between; it exuded a thin sanies of a peculiar faint, disagreeable odor. It was neither painful nor tender.

There was another tumor, about the size and shape of a hen's egg, just under the chin; this was quite soft, and about its middle was a purplish soft spot, which fluctuated quite distinctly.

There was another hard tumor on the anterior edge of the left axilla, about the size of the one under the chin, but rounder and nodulated; two small ones in the left breast and one in the right. None of these swellings gave her any pain, nor were they the cause of any complaint; she sought relief for her pulmonary troubles, her weakness, and, above all, the tormenting itching which made her miserable by day and by night. An attempt was made to remove a portion of the open tumor for microscopical examination, but owing to her extreme nervousness and timidity only such a small piece was obtained that it proved of no value. Notwithstanding this I felt very little hesitancy in making the diagnosis of intra-thoracic cancer. I prescribed iron and arsenic, a wash of hydrate of chloral for her prurigo, and one grain of codeine occasionally, to relieve her distress and promote sleep.

These means proved of benefit to her, the chloral abated the itching very materially, and the codeine proved a most admirable sedative, and gave her much needed sleep.

She went on without much change for a month, except that her dyspnoea slowly increased, but the cough became better and soon ceased to trouble her at all. By the latter part of April or first of May her dyspnoea became so great that she could no longer lie down at all, but sat constantly in an easy chair, and very soon she became incapable of straightening herself up in the chair, but sat bent forward as far as possible the whole time. There was no change in the thoracic signs, except slight increase of the dullness in front, while the heart sounds became feebler and more indistinct. During the month of May edema of the feet and legs came on, but never became excessive, being relieved by openings that formed spontaneously at points where she had scratched herself deeply; here superficial ulcers formed, which never healed up, but never spread or became troublesome, from which the dropsical fluid constantly oozes away

in large quantities. Her urine, which was repeatedly examined, never yielded any trace of albumen. She lost her appetite entirely, and experienced, besides, some difficulty in swallowing, so that she took no food at all, nothing except a little wine, and occasionally a very little milk; she refused all medicines except her powders of codeine, which she said were the only comfort she had. For many weeks it was a mystery how life was maintained.

About the beginning of June, a hemorrhage, of large extent, took place from the open tumor in the neck, which had been gradually ulcerating more deeply into the tissues.

This was checked by packing the sore with Rohland's styptic cotton; it recurred once or twice, but only to a small amount.

This hæmorrhage prostrated her very much, and for a few days she seemed to be sinking, but after that she rallied again, and continued to live in the condition I have described, and without any change worthy of note until July 31, when she quietly expired at 7 P. M.

Autopsy Twenty-one hours after Death.—Body very much emaciated, cadaveric rigidity well marked; no sallowness or icteroid hue of surface.

In addition to the external tumors already described, two more as large as large marbles were found on the left arm, near the insertion of the deltoid; they were round, hard, even, and freely moveable under the skin.

Only the thorax and abdomen were examined. On attempting to remove the sternum, it was found firmly adherent to an abnormal mass of tissue underneath, and was with difficulty separated from it.

After accomplishing its removal the whole of the anterior mediastinum was found to be filled with a firm, white tumor, which crowded the heart backwards, and somewhat downwards, and encroached on either side for an inch or two upon the sides of the lungs. On removing the whole of the tho-

racic contents the following additional observations were made:

The cancerous mass occupying the mediastinal space was much thicker above than below; it not only overlapped the lungs on either side, but the roots of the lungs themselves were infiltrated to a slight extent. There was no enlargement or other alteration in the bronchial glands. The lower portion of the new growth was blended inextricably with the pericardium, which was thoroughly invaded by the disease. The interior surface of the pericardial sac, and the surface of the heart were thickly sprinkled over with hard, white patches, looking like irregularly disposed droppings of wax or spermaceti. Upon opening the cavities of the heart its walls were found infiltrated with the cancer; on the upper part or base of the ventricular walls it was fully half an inch in thickness. The muscular tissue of the heart was pale and flabby; the valves were perfectly healthy.

There was a small nodule on the convex surface of the liver, one in the spleen, and a much larger one attached to the uterus by a slender pedicle. The uterus, kidneys, and intestines and mesentery, with its glands, were healthy.

The large mass occupying the mediastinum was very firm, hard seirrhous cancer, the other deposits were softer, and some of them presented the characteristics of encephaloid.

Though not excessively rare, intra-thoracic cancer is sufficiently uncommon to make it desirable to record all the cases in order that future investigators may have extended material from which to study this interesting subject.

The diagnosis in this case, aided as it was by the co-existence of external tumors, was easy enough, but in many instances it is far otherwise; nor, I am sorry to say, does the present case afford any symptom that can be considered pathognomonic or clearly distinctive of the disease. The peculiar form of dyspnea, necessitating the constant bowed position of the patient, has been noticed in many cases of

mediastinal cancer, and together with extensive dullness in the front and median portion of the chest, would seem to be deserving of careful attention.

The utter absence of any peculiar tinge of skin, hereditary history, and the very slight amount of pain, are also important particulars, and militate strongly against the value of these signs so much and so long relied on in the diagnosis of cancerous disease.

Notice of a case of intra-thoracic cancer will be found in another part of this journal, and three recent cases are given by Dr. William Pepper in the Philadelphia Medical Times for August 4, 1877.

In addition to these and other cases scattered throughout the journals, I would take the liberty of indicating the following sources of special information for the benefit of those who wish to pursue the subject:

1. Cancerous and other Intra-Thoracic Growths. J. Risdon Bennet. London. 1872.
2. On Intra-Thoracic Cancer. By John Cockle, M.D. London. 1865.
3. Kieffens on Pulmonary Cancer. 1841.
4. Henri Gintrac. Sur les Tumeurs Intra-Thoracique. Thèse de Paris. 1845.
5. R. Köhler. Inaugural Dissertation Tübingen. 1847.
6. Kilgour. Edinburgh and London Medical and Surgical Journal, October, 1844; and Edinburgh Monthly Journal, 1850.
7. Aviolat. Du Cancer du Poumon. Thèse Paris. 1861.
8. Dr. Budd. Paper on Cancerous Tumors within the Chest. Med. Chir. Trans. Vol. 43. 1859.
9. Struve. Diss. de Fungo Pulmon. Lips. 1839.
10. Lacaze Duthiers. Mal. Canc. des Pleur. Thèse Paris.
11. Schuster. Inaugural Dissertation. Ueber Thoraxgeschwülste. 1851.
12. Falcon. Encephaloid Diseases of Thymus Gland. London. Medical Gazette. Vol. 31, p. 731. 1838.
13. Symes Thompson. On Mediastinal Tumors. Medical Mirror, 1865.

No doubt some, perhaps important contributions have been overlooked, but I believe not many, and those here indicated will include all that are necessary for most purposes.

TRANSLATIONS.

Note on Preliminary Ischæmia. By Doctor NICAISE, Professor Agrégé to the Faculty of Medicine, Hospital Surgeon, Member of the Society of Surgery, etc. Translated from the French by Doctor BARNARD ELLIS, Alumnus of the College of Physicians and Surgeons, New York.

Since the communication made by Esmarch in April, 1873, to the Congress of German Surgeons which met at Berlin, the process of hæmostasia, extolled by this author, has rapidly spread, and has been the subject, in different countries, of numbers of publications. The boldness of this proceeding, and its comparative harmlessness, have excited the enthusiasm of those who have seen the application even in a few cases only. But soon an observation, fuller and made more attentively, has enabled us to judge better of the real value of this process, which will hereafter be the most precious means at the disposal of the surgeon.

In France, the method of Esmarch was made known by a publication in the *Gazette Medicale*, August 16, 1873. Some months afterwards, in November, Dr. Demarquay called the attention of the members of the Society of Surgeons to it. Since then it has been employed by surgeons generally, and has been the subject of a great number of works, and of very interesting experiments. It is thus important to see to-day what results have been obtained by the observation of many clinical facts and by experiment.

There are in the process of Esmarch two ends to be considered, viz., the driving back into the general circulation of the blood in the member to be operated upon (this is a sort of auto-transfusion), and afterwards the absolute arrest of the arterial circulation.

Many surgeons had already encircled the member to be amputated with the roller bandage. Dr. Guyon, by the eleva-

tion of the member and the application of a circular band above the place to be incised, endeavored to drive back the venous blood. As to the circular band applied at the root of the member, it was employed in the middle ages as a means of hæmostasia.

In 1856 Dr. Chassaignac recommended, for the same end, the ligature, with tubes or rings of India rubber. Silvestri has applied this process in a more general manner, and insists upon the value of the elastic constrictor.

This rapid sketch shows that there is little upon which to raise a question of priority. I reserve and maintain the name of "the process of Esmarch" to this preliminary process of ischæmia, although the surgeon of Kiel did not create it all; but to him is due the credit of having united in one process means which had before been used separately, and by the generalization of the operative processes he has created truly a new method of ischæmia.

Application of the Appareil.—This appareil is composed, as we know, of a band of elastic tissue, and of a tube of plain India rubber the size of a finger. The elastic tissue may be replaced by a band of plain India rubber, though the first is preferable, because more easily taken off. The band is to be applied on the naked skin. Some surgeons, however, have first covered the skin with wadding, but the utility of this is not yet demonstrated; on the contrary, it may prevent us from knowing the exact degree of compression we make on the member. Perhaps we might put the wadding between the depressions so that the compression would be equal. We can conceive that, if the pressure is unequal, blood might remain in the vessels. It has been also recommended to put wadding between the fingers and toes when the appareil is used without giving chloroform, so as not to give pain by compressing one against the other. If the member has a sore on it, this should be covered with a plaster to prevent staining the band, which last ought not to be

stretched very tightly, as it is not necessary for the producing of ischæmia. Practice alone will show to each surgeon the degree of compression necessary.

The band should be applied evenly, each turn lapping the last about one-third, so that no part of the surface escapes compression. It is assumed that in this last condition there might be isolated clots of blood left in the veins, to be carried away on the return of circulation.

The *India rubber tubes* first used by Esmarch were inconvenient in several ways, and *ought to be replaced*. Dr. Chauval, Agrégé Professor at the Val-de-Grâce, has well shown the difficulties, both of its application and its removal. Besides that, an acute pain is felt in the region where it is applied, particularly marked at the part corresponding to the chain-like directions of the tube, if they touch the skin. We shall see further on, upon the subject of consecutive paralysis, that these pains are entirely due to the India rubber tube. There are, then, sufficient reasons for rejecting this part of the apparatus, adding that the tube is often useless. Several times I have been quite satisfied, after bandaging the member, to make a few more turns with the same bandage and fasten with a knot. This means has already been employed by Dr. Labbé. It would be better to use another ligature, in the form of a band, in place of the tube. Langenbeck has proposed the use of a simple elastic band, to be fastened with a pin; and Esmarch has himself acknowledged the inconvenience of the constrictor tube. We find, upon this subject, the following in the *Progress Medicale* of October 31, 1874:

“Mr. Bryant, surgeon of Guy’s Hospital, had a case of a sequestrum in the tibia to be operated upon, and Esmarch was to assist. The surgeon of Keil found that the form and size (not so large, it is true, as the tube of Galante) of the tube which was shown to him were dangerous, and might, indeed, produce paralysis. He preferred to use a flat band, like the one first placed, and he believed its application

equally efficacious and less dangerous. He was able to put in practice at once this modification upon the patient of Mr. Bryant, using a second flat elastic band, only about thirty-nine inches long, and the ischæmia was perfect. We believe that this second band ought to take the place of the constricting India rubber tube. Divers means have been proposed to produce ischæmia, but they present less qualities than those of the appareil of Esmarch. We will describe some of them: Dr. Harrison Cripps, of St. Bartholomew's Hospital, used, instead of the band and tube, only the tube united at the two extremities to form a ring. This tube was wrapped around the member by means of a grooved reel with a double handle. The compression in this case is less even, and sometimes insufficient, e. g., in the popliteal space.

Tenderini (of Carrara) has tried, instead of the band and tube, a cord of woolen or cotton wound tightly around the member, and he was thus able to make three amputations without hemorrhage.

Rouge (of Lausanne) has proposed the use of a simple, ordinary band.

But it is, we believe, useless to show the difference between these different appareils and that of Esmarch.

In certain cases, if we wish simply to prevent the entrance of the arterial blood, we may employ an india-rubber tube, or, rather, a band with which we can make a circular constriction.

We can, in the same way, apply this band at the root of the fingers or toes, or the penis, when we operate upon those members. The process is very simple and useful, and is practiced by many surgeons.

Effects of the Appareil of Esmarch.—These effects should be divided into two classes, viz., *general* effects and *local* effects. The *general* effects are due to the driving back of the blood by auto-transfusion; they are but slightly marked, and, moreover, but little studied. Meanwhile, we have searched to see

any modifications which might happen unexpectedly in the circulation, the respiration, or general temperature of the body. The principal researches in this direction are due to Dr. Chanvel, and are stated in the thesis of Dr. Soulié; Doctors Laborde and Augier have also made some experiments.

Troubles of the Circulation.—It was at first thought that the driving back of the blood would bring a relative augmentation of the mass, and produce signs of plethora. There were none.

Esmarch, in a case of ischæmia of both legs at the same time, observed no trouble in the circulation. Rouge, also, amputated, at the same time, the two legs of a young boy, without remarking any circulatory trouble. Nevertheless, Dr. Chanvel has shown, by examination of the pulse, and by the sphygmographic traces, in his experiments that there is augmentation of arterial tension, which results were confirmed by the researches of Dr. Augier.

The increase in tension will depend upon the nearness of the compression to the root of the member. Upon this subject Dr. Augier has pertinently remarked that these experimental data are often applicable to cases of anemia, persons threatened with syncope, during chloroformization. This afflux of blood to the general circulation, it appears, ought to account partly for this accident.

Troubles of Respiration.—Dr. Soulié states nothing in particular upon this subject; he observed several times, he said, a state of great pain, malaise tending to syncope, with cold perspiration and pallor, and a desire to have the apparatus taken off.

The temperature in the axillary space observed by Doctors Chanvel and Soulié, before, during, and after the application of the appareil, showed only insignificant oscillations.

Local Effects.—The local effects should be distinguished by immediate and consecutive, according as we observe them, while the appareil is in place or after its removal. The immediate

local effects are: the pain caused by the appareil, the diminution of the size of the member, the ischæmia, the sensations felt by the patient, the modifications in the sensibility, the mobility, and the temperature.

It has been recommended not to use the appareil of Esmarch, except with administration of chloroform, so the patient may escape the acute pain caused by compression. If we consult the different observations which have been made in this respect, we shall see great differences between them; thus, while some patients have felt no pain, others have complained, more or less, bitterly. I have made some experiments where the result of applying the band moderately, but with sufficient tightness, was little or no pain; but it is not so with the tube constrictor, which produces a very lively pain, and in experimenting upon myself I found this constriction very painful.

Moreover, we have said that this tube ought to be replaced by a second India-rubber band, of the kind used by Grandesso Silvestri (of Vicence), and of which he gives the description in his treatise of 1871.

In summing up, as in some cases the application of the apparel may be painful, it is better to produce anæsthesia before. After removing the first band we see a cadaveric pallor of the limb, and also a slight diminution in size. Ischæmia is complete, and this discoloration extends itself to all the tissues from the skin to the bones. The arteries and veins are empty. Dr. Angier, interne at hospitals, has dissected the amputated members, after use of the elastic band, and found the veins absolutely empty. He says this is not true of the points where uniform compression was not possible; for instance, in the deepest veins of the bottom of the foot, behind the ankles, and in the popliteal space, where he has found some drops of blood. In the work of the same author we find an observation (obs. V.) where the muscles showed an interstitial infiltration of blood. This hap-

pened in an amputation of the thigh at the inferior third, made by Dr. Périer. Before taking off the constricting tube, they perceived that the muscles at the bottom of the cone formed by the stump were infiltrated with spots of blackish blood about the size of a ten cent piece or an English sixpence, which they were unable to remove, either by washing or by rubbing.

"There is the action," said Dr. Buret, the author of the observation, "of a true *interstitial sanguineous infiltration of the muscles*." The demonstration of this infiltration is important, because it shows that we ought not to apply this *expulsive band* either too rapidly or with too much force, that the blood may have time to flow towards the root of the limb, and also to avoid rupturing the vessels, particularly the small venous branches.

Pertinent to this matter of discoloration of the tissues, it is a point to which I desire to call attention, and which struck me in an operation of sub-periosteal resection of the elbow, which I performed at Pitié Hospital. The patient was a young girl, who had a chronic purulent arthritis of the elbow, with necrosis of the olecranon. The bone was discolored, bloodless, of a dead white, and slightly grayish, so that it was difficult to determine the exact limit between the diseased and the healthy bony tissue, and we might have believed the necrosis extended farther than it really did extend. I observed this in detaching the periosteum, and the examination of the surface and consistence of the bone completed the diagnosis of the lesion.

It is useful to know beforehand the existence of this *particular tinge of the bone*, and since the important sign of the vascularisation of the bony tissue is wanting, it is necessary to make a more careful examination of the other anatomical modifications presented by the diseased bone.

I come now to the *sensations* felt by the patient. He feels formication in the member, and also a numbness which is

sometimes painful. In an experiment to which Mr. Cartaz, interne of hospitals, submitted himself, he felt acute pains at the finger joints. The limb becomes heavy and burdensome, the patients find it difficult to move it, and in several of the experiments of Dr. Chauvel, movement was impossible. The temperature of the limb falls, but we did not mark the variations in man. Doctors Laborde and Morel d'Arleux communicated to the Biological Society the results of experiments on dogs, and from which the temperature fell from 7° to 9° Fahrenheit, but rising 3 to 3.5° above the normal state after the bandage was removed. Dr. Krishaber, relying upon his own experiments, has made some reservations upon the results obtained by Dr. Laborde. He has well established the fall in temperature, but not a consecutive elevation.

Anæsthesia.—Since the appearance of Esmarch's apparatus, it has been asked if ischæmia did not bring with it anæsthesia sufficient to permit of certain operations without chloroform.

It is admitted that ischæmia brings by itself a certain insensibility. The experiments upon animals show that when we bleed a member, the cutaneous sensibility disappears, but returns when we inject blood into the vessels. Meanwhile, numbers of observations prove that sensibility remains after the application of the appareil, and, on the other hand, some facts have been published, in which the patient, not under chloroform, has not felt pain. (Communications made to the Surgical Society, by Dr. Le Fort.)

In the face of these diversities, and of the interest shown to resolve the question, bold experiments were made, from which it resulted that the anæsthesia was due particularly to the compression of the nervous trunks. Among these experiments, part were made by Drs. Laborde, Morse d'Arleux, and Krishaber, on animals, and part were made upon man by Dr. Chauvel and other experimenters. The results obtained are nearly like those obtained by Drs. Vulpian and

Bastien, twenty years since, in their researches upon the effects of compression of nerves. The positive observations of Drs. Vulpian and Bastien, may serve as guides in our new researches. Also, let us believe, we ought to remember the conclusions to which these experimenters had arrived. The experiments were made upon themselves, repeated by others, and the results were constant.

From these experiments, the effects of the compression of nerves divide themselves into two periods. The first period comprises four states, viz.:

1. The state of formication, which lasts from two to ten minutes, and more.

2. An intermediate state, when formication has ceased, and all seems to return to the *normal state*, varying from a few seconds to a quarter of an hour.

3. A state of hyperæsthesia, sensibility to the touch, or to tickling, and increase of temperature, of no precise duration.

4. A state of *anæsthesia* and *muscular paralysis*. For the experiments, compression was suspended at the moment when muscular paralysis was complete. This state lasts from a few minutes to a quarter of an hour.

The second period commences after the cessation of compression, and is equally divided into four states, the order of the phenomena, however, being reversed. After the state of paralysis of sensibility and movement, lasting from a few seconds to one or two minutes, or more, comes the return of hyperæsthesia; then the intermediary normal state, and finally a state marked by a rapid centrifugal invasion of a sensation of cold, and of great heaviness or weight in the members. At this moment we notice malaise, tendency to fainting, formication, and finally a return to the normal state.

Drs. Vulpian and Bastien noticed a very important fact, viz.: that at whichever of the states of the first period we

take off the compression, a corresponding state will commence the second period. Thus, if compression ceases during the state of hyperæsthesia, the second period will commence with the same, and there will have been no anæsthesia.

Dr. Chanvel has made upon himself and others, equally interesting experiments, and which were the subject of a report made by Dr. Lannelonger to the Surgical Society.¹ Dr. Chanvel has shown that anæsthesia never takes place immediately, but is developed only after ten, fifteen, or twenty minutes. Insensibility appears sooner in the superior than in the inferior member; and the degree of constriction by the band, and especially by the constricting tube, has much influence upon its slow or rapid development, and upon the degree of anæsthesia.

Insensibility appears at first in the parts farthest from the trunk, and only reaches the superior regions progressively; and it is also in the extremities that it is most intense.

Finally, for Dr. Chanvel, there is evident anæsthesia, but it is nearly always incomplete.

It is interesting to compare the results of Dr. Chanvel's experiments, with those of Drs. Vulpian and Bastien, because we see that these last arrived at sound conclusions.

I have myself made some experiments, in which I ascertained there was a deadening of the sensibility, which was the more marked as we approached the extremity of the member. I have observed, also, a period of hyperæsthesia; and in one case the sensibility as to temperature was nul, the patient not feeling the contact of a cold body. As to the sensibility in the deep parts, in pressing in different ways the muscular masses, the patient complained of nearly the same sensations as in the parts not constricted. In employing the apparel of Es-march, in operations of growing-in nails, though the cuta-

¹ *Union Medicale*, November 17, 1874.

neous sensibility was deadened, the patient complained of very sharp pains during the operation. To resume, the appareil of Esmarch, such as we ought to employ to produce ischemia during an operation, still does not determine sufficient anæsthesia to prevent the patient feeling pain during the operation.

If we make very strong compression, particularly with the constricting tube, we shall be able to produce anæsthesia by compression of the nervous trunks, but it is dangerous, and may, as we shall see further on, bring with it grave hæmorrhages, and be followed by paralysis. Professor Le Fort, under these considerations, and who had called attention to the possibility of anæsthesia being produced by the appareil of Esmarch, has declared himself no longer a partisan of this method of producing insensibility.

The *consecutive local effects* are those we observe on taking off the appareil.

We have already seen what are the phenomena observed as to sensibility, after cessation of compression of the nerves.

In the observations and experiments which have been made with this appareil, the sensations of numbness and formicans only, have been described. Dr. Soulié said that the formicans are sometimes intolerable, and aggravated by the least contact.

The *mobility* is not generally affected; the member, after a feeling of weakness for some instants, soon recovers its normal movements. Meanwhile several cases of consecutive muscular paralysis have been noticed, but we can say that this grave complication is due to the violent constriction exercised, particularly by the tube. Esmarch has never seen this, but attributes it to the same cause.

The known cases of muscular paralysis are very few, and were all in the superior members, where the nerves are more easily compressed.

Dr. Angier reports that twice, following operations for

pseudarthrosis of the humerus, Langenbeck had observed paralysis of the median nerve, which, however, disappeared in about a fortnight, and which he attributed to the constriction of the tube.

I am indebted to Dr. Cartarz for an interesting memoir upon paralysis of the median and cubital nerves, and from which I have made the following extract :

*" Chronic Osteitis of the Tibia and the Humerus evidently ; Application of the Appareil of Esmarch ; Consecutive Paralysis of the Median and Cubital Nerves.—*L., 18 years; store clerk, had, in his youth, obstruction and suppuration of the glands of the neck. About a year before entering the hospital there had been a progressive development of an osteitis of the tibia. At the end of two months, a series of osseous fistulas were established. Shortly after a doctor incised an abscess on the right arm, which followed a contusion caused four months before by a kick from a horse. The bone was found denuded, and there also was an osseous fistula. At the time of entering the hospital there were seven or eight fistulous tracts leading to a necrosis of the tibia.

November 8. These fistulas proceeded, evidently, from the fibula, and, on the second of January, there remained a single sore, of the size of a five franc (or a dollar) piece. Osseous fistula persisted at the junction of the superior and middle third of the right humerus, conducting to a cavity where the probe showed there were fragments of necrosed bone.

January 24, 1874. After chloroformisation application of the band and tube was made at the root of the shoulder, according to the rule prescribed by Esmarch, and moderately tight. An incision, three and one-eighth inch long, was made along the external border of the arm, and two and three-fourths inches from the shoulder, from which were taken three pieces of sequestrum, and some fungus growths. During the operation, lasting about twenty-five minutes, not a drop of blood flowed. The wound was tamped with dry

lint, and bound with a roller bandage. The state of the patient was perfect at the evening visit, but a slight, painful swelling was seen at the point of the shoulder. Around the sore a redness, like scarlatina, disappearing on pressure, but returning quickly. The wound offered nothing worthy of notice; the redness ceased abruptly at the level of the place where the tube was applied.

Incomplete anæsthesia of the hand, fore-arm, and superior portion of the arm.

Loss of mobility, fingers flexed with difficulty. Since awakening, the patient has felt formicæ in the whole arm, but without pain. Incomplete paralysis of the flexors; the hand cannot completely close.

There is a very noticeable diminution of the sensibility; he feels the pricking of a pin, but gentle touch is not felt.

Temperature normal. In the fore-arm, anæsthesia shows itself, particularly in the vicinity of the cubital nerve. Sensibility seemed more blunted at the palmar surface of the hand than at the dorsal surface. The thumb and forefinger have the least sensibility.

January 25. Cutaneous redness, much more marked, still disappearing, however, on pressure. Edematous swelling more pronounced at the shoulder. Pain in the axillary region, but no induration on the line of the vein. Outside the redness, the skin is white, and they seem to be in presence of a veritable *plegmasia alba dolens*.

January 26. Same swelling and redness; anæsthesia less pronounced on palmar surface of fore-arm and hand.

January 27. Swelling at shoulder diminished; redness a little less; sensibility returned; the flexors again act, though the thumb flexes less readily than the other fingers. Sensibility to the gentle touch of the pin not always seen.

January 28. Redness and swelling have disappeared; sensibility of palmar surface of fore-arm and hand nearly normal.

January 29. An abundant hæmorrhage from the upper portion of the wound; arrested by tamping with lint saturated with per chloride of iron.

January 31. Paralysis of median and cubital disappeared.

February 3. On removing the tampon, no hæmorrhage. Towards the 1st of March the wound was nearly closed, and the patient sent to Vincennes.

This memoir suggests several remarks, as the application of the appareil of Esmarch has been followed by an unusually pronounced scarlet cutaneous redness; by an abundant secundary hæmorrhage; and finally, by an incomplete and temporary paralysis of the median and cubital nerves. We shall return to the two first complications further on.

This case agrees with the case of Langenbeck in demonstrating the possibility of producing paralysis by this appareil.

We must be careful, then, not to make too powerful constriction, and reject the constricting tube, which has been the cause of the paralysis.

I will add, in terminating this sketch, that Dr. Gayet, of Lyons, has made some experiments on dogs, for the study of mobility, and produced temporary paralysis.

Perhaps these paralyses might show themselves if the appareil is left on too long. Dr. Gayet appears to have observed in his experiments, that the troubles in the mobility increased with the duration of the application. We must wait the results of ulterior observation.

Let us come now to the phenomena observed in the *vascular system*.

Immediately after the removal of the constrictor, a rapid *congestion* is produced of all the parts that have been submitted to the pressure; the skin becomes reddened, the tinge being more or less dark. The intensity and duration of the congestion is in accordance with the force and duration of the compression, while it is more intense and persistent at

the points compressed ; and is due to vaso-motor paralysis. And it is not only in the skin that we observe this congestion, but in the body of the tissues and on the cut surface of the bone.

This congestion is usually of short duration.

In one experiment made with Dr. Cartaz, the appareil, applied so as to produce complete ischæmia, remained in place six minutes, and congestion showed itself immediately upon all the points under ischæmia, but which commenced to diminish in about two minutes, and entirely disappeared in four minutes.

Sometimes the *redness persists* longer.

This fact is noticed in the memoir of Dr. Delannoy ; and Dr. Angier also reports a case, which he attributed to a vaso-motor paralysis.

It acted in the same way, very clearly, in a case of necrosis of the tibia. The day after the operation, they discovered at the knee (the band had been applied at the inferior third of the thigh) a diffused redness, but without any phenomena of reaction, either local or general.

This redness was limited to the joint, and stopped at about an inch above the superior edge of the wound. Slight concurrent hemorrhage. Both disappeared at the end of three days.

In the observation to which we have before referred, due, as also the preceding one, to Dr. Cartaz, the redness also persisted three days, and was seen where the tube had been placed.

I shall not urge the point further, but wished to bring the fact to notice.

The *hemorrhage* which is seen after the removal of the appareil, presents a subject of much higher interest to the surgeon.

Let us occupy ourselves, first, with that which is produced immediately.

When this appareil was first used, but little importance was attached to this hæmorrhage, and in reading the literature, one is struck with the great number of compilations upon this subject. The operation, say they, is made without loss of a drop of blood; but we see at the time of dressing the wound, that there has been a more or less abundant hæmorrhage, sometimes very abundant. We will add that, in a good number of cases, hæmorrhage is reproduced in the first twenty-four hours.

That does not prevent the author from often deducing conclusions, that the process of Esmarch, preserved to the patient, all his blood. It is a great exaggeration, as was said by Dr. Verneuil to the Surgical Society; and this is the opinion to-day of the greater part of the surgeons of England and of France.

What is true, is, that during the operation there is no escape of blood, and this makes Esmarch's appareil valuable in many cases. But as soon as the constricting band is removed, the blood flows rapidly into the dilated vessels; the skin and the other tissues become congested, and at the surface of the wound, the blood wells up in abundance, as it has been expressed, as into a sponge.

Not only is there hæmorrhage on the cloth, but the smallest arteries, which have escaped the pressure, throw out jets of blood, and numbers of little veins also give out black blood.

Happily this hæmorrhage is of short duration; and diminishes soon of itself, at the same time as the congestion diminishes, the two phenomena being due to the same cause. The hæmorrhage is to be the more feared, as the constriction is made too strong, or too much prolonged.

This hæmorrhage warns the surgeon to ligate carefully all the arteries visible, before removing the appareil, and also those that bleed at the time of removal, for fear of secondary hæmorrhage, which nevertheless often comes unexpectedly.

It is useless to produce further testimony demonstrating the fact, these hæmorrhages being sometimes very abundant, and of frequent occurrence, and, in some cases, the patient has lost as much if not more blood, than under digital compression of the artery. I have had occasion to observe this in performing Lisfranc's amputation.

Is it true that the amount of blood lost with Esmarch's process is less than by the ordinary method?

The patient loses blood, but not so much as under the old plan, if we ligate carefully all the bleeding vessels, before removal, and do not make too violent nor too long compression.

It is not the immediate loss of blood under Esmarch's plan of which I complain, although it prolongs the operation from the great number of arteries and veins to be taken up; but I do complain of the danger of secondary hæmorrhages which it leaves.

These are frequent, sometimes abundant, oblige us to undo the first dressings, and irritate the wound by the search for the bleeding vessels, and by the hemostatis employed. I do not fear to say that, in the process of Esmarch, there is greater liability to secondary hæmorrhage than under ordinary digital compression. I have observed several cases.

Dr. Verneuil has noticed these secondary hæmorrhages, and their inconvenience when they applied the wadded dressings of Dr. A. Guérin. Several times they have been obliged to remove these dressings.

These considerations, viz., abundant and sometimes very great immediate hæmorrhage, the necessity of a great number of ligations, and of waiting much longer before dressing the wound, and in consequence, a longer time occupied in the operation, as also danger of secondary hæmorrhage, show that the process of Esmarch in ordinary amputations is not as serviceable as was expected, and that we ought often to prefer the ordinary method. Sometimes cold water sprinkled

upon the wound is sufficient to arrest hæmorrhage. In cases of sequestra, where the process of Esmarch is so useful, hæmorrhage is generally slight, and is arrested by a compress.

Some surgeons, and Esmarch himself, have in these cases dressed the wound before taking off the constrictor, Esmarch sometimes using starch and per chlor. iron for dressing. Nevertheless, hæmorrhages do often show themselves, as we have seen in the work of Dr. Delannoy.

As to *secondary hæmorrhages*, they have been but very little debated in the published works. We have cited some cases, but it is a point which demands fuller investigation.

I will close by bringing to notice some exceptional accidents which have been observed to follow the use of Esmarch's apparel, the interpretation of which will raise discussions, but I ought to describe them.

Several cases have been cited of *gangrene* of the lacerated parts of the wound, but the facts do not demonstrate that this complication attaches to the use of the apparel of Esmarch.

Doctors Delannoy and Augier believe that the apparel may produce secondary phlebitis and abscesses, and each one brings a case in support of their opinion. The case of Dr. Delannoy opens up too large a discussion for this paper, but Dr. Augier thinks that superficial veins may become inflamed, particularly if the apparel is applied over varicose veins, and cites a case (Obs. XXII.) so interesting that we produce it here.

Man, varicose veins of leg. Extirpation of the little toe for caries. The patient was not anesthetized, and in spite of the powerful and painful constriction made, the pain resulting from the operation was acutely felt. Padded dressing, but they were obliged to remove it on account of the pain complained of by the patient. Phlebitis of the external saphenous vein, followed by an abscess at the point of

constriction. The phlebitis seemed also to originate there. The third day another abscess at the same level, but on the opposite side of the leg. It was sub-cutaneous and much extended. These accidents were followed by chills, and the state of the patient is still grave. I confine myself to this fact, in which the constricting cord has had at least a certain influence upon the seat of the phlebitis.

I have, in this review, studied the effects of Esmarch's process, by analyzing most of the works which have appeared in France upon the subject. I leave aside for the moment other questions which attach themselves to the use of this method of ischemia, such, for instance, as the indications, the contra-indications, its influence upon the progress of healing, etc., etc. I will add, however, in conclusion, that if this method does not appear to be of great service in ordinary amputations, it will be very useful in resections, operations for sequestra, in wounds of arteries, searches for foreign bodies, etc., etc. Its field of application is thus vast, and its importance such that we ought to become well acquainted both with its immediate and its remote effects—a study which we have been able only to sketch in the foregoing lines.

[Here follow the names of twelve distinguished surgeons in Germany and France whose published opinions the author has consulted in this memoir.—THE TRANSLATOR.]

CORRESPONDENCE.

NEW YORK, July 15, 1877.

Prof. J. H. Pooley, M.D., Editor Ohio Medical and Surgical Journal :

DEAR DOCTOR: In my last letter I gave expression to my admiration and my esteem for the eminent surgeons connected with the New York Women's Hospital. The object of my referring to-day again to the same institution, and the gentlemen connected with it, is twofold. First, I am enabled to lay before your readers some statistics corroboratory of my former statement, regarding the operations performed and the small death rate following in the New York Women's Hospital, from May 1, 1872, to December 22, 1874, being the days upon which Dr. Marion Sims entered and left the hospital :

	Number of patients admitted.	Number of operations.	Deaths.
By Dr. Sims	237	215	14
By Dr. Thomas	207	93	11
By Dr. Peaslee.....	132	88	6
By Dr. Emmet.....	143	116	1
Total.....	919	512	32

Out of 512 operations there were 32 deaths; or about six per cent. I am convinced that as soon as the antiseptic or Lister's method shall be introduced, the percentage will be still more favorable. The cold water treatment of fevers following operations has only partially been tried in the Women's Hospital. With these two additional methods, added to the great skill displayed by the attending surgeons, it is safe to predict that the mortality among properly and carefully selected cases will probably yet decrease to a considerably lower number.

The antiseptic treatment of wounds has been made obligatory in the German and Austrian army hospitals, and some surgeons in Austria, who have compared the different methods of treating wounds, and have expressed their preference for Lister's method, have been decorated with medals by the Emperor of Austria—so I read in the Wiener Medisinische Wochenschrift. I return to this question—a momentous one, without doubt, is that of knowing how to save human lives—in order to induce all those whom I can convince of the superiority of Lister's treatment to try it, if they have not already done so, and they will surely be more successful surgeons than without it.

Secondly, I referred to the Women's Hospital in the State of New York for the purpose of expressing my regret at the attacks made on each other by the gentlemen who were the founders of the magnificent and so eminently conducted institution. Thus the greatest of men are but human, "*errare humanum est*,"—to err is human, to forgive is divine. The profession throughout these United States will be grieved at the harsh language used first by Dr. M. Sims against Peaslee, Emmet, and Thomas, charging them with ungentlemanly conduct and double dealing, causing, as Dr. Sims believes, that his resignation as one of the surgeons of the Women's Hospital, which he tendered in a moment of excitement, was at once unanimously accepted by the board of governors.

The cause of him (Sims) tendering his resignation was that he disagreed with the other attending surgeons of the Women's Hospital, in the State of New York, regarding the propriety of not admitting patients affected with carcinoma into the wards of the hospital, and, secondly, that no more than fifteen invited guests be present at any one time as witnesses of the operations at the hospital. Dr. Sims opposed both rules, and threatened to resign in case these two resolutions should be carried into effect. The board of

governors, it seems to me, very properly excluded cancer cases from the wards of the Women's Hospital, and showed good sense on their part in not allowing the operating room to be crowded unnecessarily, as it is impossible for more than fifteen gentlemen to look into one vagina at one and the same time. Dr. Sims differed from all connected with that institution, hence his resignation, and as he would not serve unless these two resolutions were rescinded, the governors, I have no doubt, in consideration of that gentleman's eminent services rendered, reluctantly accepted Dr. Sims's resignation.

But it seems that Dr. S. regretted that he tendered his resignation, and severed his connection from an institution of which he was the founder, and in which his methods of operation were performed, to the benefit of hundreds of suffering women. He laid his grievance before the profession, and accused his colleagues, as stated, of unfair dealings. It was but natural that Drs. E. R. Peaslee, T. A. Emmet, and T. G. Thomas could not let the matter rest, coming as it did from such high authority, and they in turn laid their version of this disagreeable affair before the medical world.

Stating, as it seems to me dispassionately, how it came that Dr. Sims's resignation of the office of attending surgeon of the Women's Hospital in the State of New York was accepted, as far as I can judge I think Dr. Sims has erred in tendering his resignation from an institution which owed to him its existence, or rather its origin, and he has further erred in accusing the other gentlemen named of having in any way caused, either directly or indirectly, that Dr. S. should tender his resignation, or that it be accepted. Dr. Sims thought he would be coaxed to remain, and would continue to be, as he desired to be, the absolute dictator of the institution. The attack upon Peaslee, Emmet, and Thomas was entirely unprovoked, and they were, as gentlemen, compelled, and in duty bound, to reply, and to vindicate their

honor before the profession. This they have done. I have no doubt it will be the impartial verdict of the medical world who have read both pamphlets, that no matter how eminent the services of Dr. Sims as a gynecologist, and how proud we are to hear and see his illustrious name admired, both here and abroad, still every impartial observer of this disagreeable affair must find Dr. Sims *at fault*, while no blame can be attached to the action of either Drs. Peaslee, Emmet, or Thomas. Many of your readers have no doubt seen and read both pamphlets, but as there may be some who have not read it, I have referred to it in this place.

My letter from New York at this season of the year, to a medical journal, would be incomplete were I to omit a reference to the quarrel herein mentioned, since it has been the topic of conversation and regret among the New York physicians for the past month or two. In my opinion it is the duty of the medical profession, through its journals, to weigh the evidence furnished by the high and honorable contesting parties, and to pronounce judgment in accordance therewith. As a faithful correspondent I have here given expression to the feeling of those of my New York professional brethren whom I have interviewed on the subject.

Still another war with the pen has taken place between two eminent eye doctors in New York, through the medium of the New York Medical Record. Dr. Loring and Dr. Knapp quarrel about who was the real inventor of the ophthalmoscope with the multiple discs. Both claim the honor of having made certain improvements, and both are right. Each of the gentlemen admit that they have improved upon each other's improvements, upon what Wecker, of Paris, and others had improved before; and so the improvements are still going on, and the world moves on. Loring's ophthalmoscope is as good as Knapp's, and Knapp's as good as Loring's. Dr. Knapp has gone to Europe for a couple of months, and left his large and lucrative practice in charge of your es-

teemed brother, T. R. Pooley, M.D., who, I am glad to learn, has been recently appointed Clinical Professor of Ophthalmology in Starling Medical College. DR. RUDOLF TAUSZKY.

COLUMBUS, July 29.

DR. J. H. POOLEY—*Dear Sir*: My cellar is usually dry, and kept clean, but some time ago the water meter burst, and before the damage was detected and repaired, enough water had escaped to render much of the cellar floor decidedly moist, although no water was visible. In a short time the air of the cellar became offensive, and a sort of musty smell became observable in the rooms above it. Thereupon I had the cellar thoroughly cleaned out, and sprinkled chloride of lime freely about on its floor.

The point I wish to note is this: The windows of the cellar, six in number, have been wide open for weeks. The windows of the ground floor, five in number, and large, and the front door, are kept open most of the time—in fact from 7 A.M. to 11 P.M.—and to-day, by some inattention on the part of “Old Probabilities,” there has been a free current of fresh air through the rooms. Nevertheless, within four hours after the chloride of lime had been sprinkled in the cellar, chlorine was unmistakably present in the air of the rooms above.

It seems to me that this observation is an additional evidence to those already collected, of the danger to which the occupants of houses are exposed from decaying matters in cellars. For if chlorine (specific gravity 2.47) can so easily make its way through floors, paper linings, and carpets, why may not also the gaseous and sometimes poisonous products of decay? Whether wrongly, or not, I attribute some of the discomfort I have lately “enjoyed” to the damp cellar.

On sprinkling the chloride of lime, I expected that sooner or later I should know, by the air in the rooms above, that chlorine had been liberated in the cellar below; but I con-

fess that I was amazed at the rapidity with which it made its presence manifest, under the conditions noted.

While writing this, I call to mind several cases of typhoid fever which were (and probably with truth) attributed to the bursting of house sewers, undiscovered for some time through being covered with the winter's coal.

But is not cellar air, under ordinary conditions, foul air? And ought not greater care be taken in keeping cellars perfectly free from decaying matters?

Very truly,

S. A. N.

VIENNA, AUSTRIA, *July, 1877.*

DEAR DOCTOR: Continuing our review of the medical celebrities here and turning to the department of ophthalmology, we find that science fostered by such men as Arlt and Stellwag v. Carion. Professor Arlt gives combined lectures and clinics two hours daily on five days of the week, and here also, as all other professors, treats the poor gratis. Being now sixty-six years of age, he has but four years more before he will be put on the pension list. Notwithstanding his advanced age he has but a slight sprinkling of gray in his dark hair, and in form and features very much resembles the Professor of Chemistry at Starling College, only that his face is garnished by an immense pair of iron-bound spectacles. Arlt lectures in a very low voice, and has a rather loose and disconnected style. About his elegance and skill in operating, it is needless for me to say anything in its praise. He has been connected with the University for over thirty years.

Prof. Stellwag v. Carion, better known simply as Stellwag, lectures at the same time as Arlt. He is more corpulent and rather more comfortable looking than his colleague, and considerably younger, being about forty-five. His face is ornamented by a black mustache and a good sized Lincoln wart. He speaks rather loudly, and with a tinge of the Viennese dialect. He has been connected with the University

for about four years—since the shutting up of the Josephinum, the former military medical academy.

Of dermatologists we have here the renowned Prof. Hebra, the founder of a scientific dermatology. Hebra, born in 1816, and, consequently, now sixty-one, graduated from this school in 1841. He became assistant in the Krankenhaus, and in 1844 published his remarkable work on scabies, which at once attracted attention toward him. In 1848 he was elected professor extraordinary, and in 1869 he was made “ordentlicher” professor. Hebra, with his white hair and sleek paunch, is a jolly looking fellow, and indulges freely in jokes and wit during his clinics and lectures, much to the delight of his students. He lectures from seven to nine A.M. from Monday to Friday included.

Besides the men already mentioned, we have such men as Bamberger on internal medicine; Heschl and Stricker in pathology; Zeissl and Sigmund in syphilis; Dittel, Lauger, and others; but as the writer tires of writing, so your readers will tire of reading, and therefore to a change.

That even the greatest are liable to err, was recently illustrated by no less a man than Billroth, and, as it may tend to console some unfortunate brother—the details. A few weeks ago a woman was sent to Billroth, on whom an ovarian tumor had been diagnosed. The case was deemed one suitable for operation, and the professor proceeded to operate with his scrupulous care always used in such cases. He operates only early in the morning, in a hot room under the carbolic acid spray, with sponges and instruments that have been soaked in a three per cent. solution of carbolic acid, and with the help of assistants with perfectly clean clothes, and they must not have been to see any sick before the operation. In this case all these precautions were observed, but when the first incision was made into the abdomen a fountain of clear fluid broke forth and the case turned out to be one of simple ascites without the least trouble with the ovaries.

On the 22nd of June, Prof. Spaeth made the Cæsarean sec-

tion on a woman with contracted pelvis. The child was at full term and after its extraction the uterus was amputated at the cervix, with the galvano-caustic loop, it being impossible to make that organ contract and stop bleeding. Mother and child are both alive and doing well at this date.

The lectures and clinics are now all closed but some of the private courses, of which there are a great number during the year, still continue as they will during the whole of vacation. These courses, which usually last from four to six weeks, are given by the assistants, "privat-dozenten" and as they are usually limited to ten or twenty students, they are very valuable aids. The foreigners here confine themselves almost exclusively to these courses. During the present year the medical school was attended by nine hundred and six students, the largest number at any one school in Europe, and among them are representatives from all countries where doctors exist. The Americans have representatives from nearly every State in the Union.

A. M. BLEILE.

REPORTS OF SOCIETIES.

MONTGOMERY COUNTY MEDICAL SOCIETY.

This Society held its monthly meeting in the parlor of the Beckel House, Dayton, Ohio, on Thursday, June 7, at half-past seven, P.M., with a large attendance. The Society was called to order by the President, Dr. J. C. Reeve.

Dr. J. D. Daugherty, the essayist for the evening, presented the Society with a very interesting paper on the therapeutic use of quinia, which was thoroughly discussed.

Dr. W. J. Conklin presented an encephaloid tumor, with a history of the case.

Dr. J. C. Reeve gave the Society the history of two very interesting cases of lithotomy that he had under treatment, and presented the calculi that had been removed, for inspection.

Resolution by Dr. J. D. Daugherty: That the President and Secretary be authorized to make out credentials for any of the members who wish to represent the Society, as delegates to the Ohio State Medical Society.

On motion of Dr. Conklin, it was

Resolved, That a committee of two be appointed by the President to investigate the Morrison Bill to take off the tariff on quinia, and to report at the next meeting of the Society.

The President named Drs. Conklin and Jewett.

Dr. J. B. Wilson, of this city, and Dr. J. F. De Bra, of Miamisburg, were proposed by Dr. Treon, for membership.

Dr. Scheibenzuber was appointed essayist, with Dr. Hoff as alternate, for the next meeting.

Dr. Reeve presented two specimens of urinary calculus, with the following remarks:

“Gentlemen: You will remember that at our meeting in February, Dr. Weaver presented a very interesting specimen of urinary calculus, removed by lithotomy, at the Soldiers’ Home, the nucleus being a stalk of grass or straw. I then called your attention to the extreme rarity of this disease in this section of the country, and to the desirability of placing upon record all cases, that in the future we might be able to definitely compare this with other regions of our country. Up to that time, I had met with but one case of vesical calculus in twenty-three years’ practice here, having, about three years ago, removed one, the size of a bean, from the bladder of a boy five years old. One other case I saw, in the person of an adult, a transient resident, and he went on to Cincinnati; he probably did not acquire the disease here. One case heard of was operated on by the late Dr. Crook; another was on the person of a boy, twelve years of age, who died at the Children’s Home six years ago, just before I took charge of the institution; and, since then, I have heard of another, in the northern part of the county, an adult male, which went out of the State for operation. These are all the cases seen or heard of, and I think you will agree with me that this indicates a very rare occurrence of calculous disease in this section, since it presents not only all cases seen, but all heard of, by one pretty well acquainted as to the medical matters of the county and section for a period of twenty-three years.

“Since that meeting, at which Dr. Weaver presented the specimen, two other cases have fallen under my care, have been operated on, and the specimens are before you.

“The first is a small, very hard and very irregular calculus, weighing about twelve grains, which I removed, by incision, from the urethra of a boy about fourteen years of age. He had, occasionally, symptoms of stone in the bladder all his life, but within twenty-four hours of the time I saw him, he had suffered very severely, especially upon attempting to make water, and it was only with great difficulty that he relieved himself. Putting him under an anæsthetic, an attempt was made to pass a

catheter, but it met with an obstruction in the perineal region. Pinching up the tissues deeply the stone could be plainly felt, and all fair efforts to push it back into the bladder, or to move it in any direction, having failed, it was cut down upon and removed. The incision began at the posterior junction of the scrotum with the perinæum, extending thence downwards. Extraction was somewhat difficult, from the impossibility of making a clean incision over so irregular a body, but there was no hæmorrhage of consequence. A soft catheter was kept in the bladder a few days, and recovery followed.

"The second specimen is a calculus measuring one inch and three-eighths in length, by three-fourths of an inch in diameter, and weighing ninety-five grains. The patient was a boy five years old, brought to my office, with a very clear and distinct history of stone in the bladder, extending over two years past. Sounding verified the existence of calculus, and I performed the operation of median lithotomy, assisted by Drs. Conklin, Neal, Jewett, and E. B. Davis. The patient had a very small penis and urethra, so much so that a No. 6 staff would not enter, and I was obliged to send to Cincinnati for one, and with it received word that it had to be made on purpose, as so small an instrument was very rarely required. The patient being placed under chloroform, I incised the urethra from behind, forwards and upwards, passing the point of the knife into it at the anterior border of the prostate, then introduced Little's director, and upon this gained access to the bladder with my finger. The stone was high up, was caught with difficulty, and I had still greater difficulty in extracting it. I used a strong polypus forceps, which gave a firm hold, but which made some risk of crushing it, which I wished to avoid. The first seizure was transversely, too, so that some delay was occasioned, both to catch it right, and then, from its size, to extract it. In this part of the operation I was materially assisted by pressure above the pubes, and afterwards by a finger in the rectum. The calculus, as you see, bears the marks of abrasion by the forceps. The patient did extremely well after the operation; he recovered without a single bad symptom; it was not, however, until the thirteenth day that he passed his water entirely by the urethra.

"It would, of course, be but foolish presumption, for any one having so limited an experience with lithotomy, to say anything here as to the relative merits of the median and lateral operations. While the latter has the weight of authority, as well as the greater number of authorities, on its side, the other has a few talented and warm advocates, who have pressed its claims upon the attention of the profession. Without expressing any opinion as to which is the better operation, I may be permitted to call attention to one point: the median operation held to be is

only admissible in cases of small-sized stones, yet here is a case with a stone of very considerable size, and with a result which was all that could be desired. I confess that, had I not been mistaken as to the size of the stone, I should, in this case, have performed lateral lithotomy, but I got out of a sick bed to make the first sounding, and did not get as accurate information as to the size of the stone as was desirable or perhaps necessary."

Dr W. J. Conklin reported the following case of intra-thoracic tumor: The variety of intra-thoracic tumors and the difficulties of diagnosis, invest each case with a special interest, aside from any intrinsic value which it may possess. As a contribution to the statistics of intra-thoracic growths, I report to the society the following case of encephaloid disease, developed in the anterior mediastinum, occurring in the practice of my friend Dr. DeBra, of Miamisburg.

Unfortunately, the clinical history of the case is very imperfect, and I shall, therefore, not attempt to give the development of the symptoms in chronological order.

J. P. G., æt 26, married, a carpenter by occupation, was well developed, and, excepting periodical attacks of asthma to which he had been liable from youth, had always enjoyed excellent health, until within less than a year previous to his death.

On July 4th, 1876, after short but severe exertion, he was seized with a severe pain in the anterior part of his chest. From this period he was subject to almost continuous pain in this region, which, at times, reached great severity. About the beginning of the present year he was taken with a severe cough, attended with profuse expectoration, which persisted until death. Near the first of April, œdema of the left arm was noticed, which, gradually involving the trunk and limbs, chiefly of the left side, slowly increased until death.

During the last three months of the patient's life, dyspnœa much increased upon exertion, was the prominent symptom.

About ten days previous to his death, Dr. Reeve was called in consultation. From his notes I make the following quotation: "The position in which I found the patient (Mr. G.) was peculiar; he was lying on the left side, bent forward, the head resting on the left arm, extended upwards, and this position had been maintained for some days, and he said that he could not comfortably bear any other position. He was, however, gotten up into a chair for examination, but could not bend backwards of an upright position. I was struck at once with the extensive and complete dullness of front and left side of chest, but all of the left side was very œdematous, even down to the crest of the ileum, thus interfering with auscultation and percussion. The apex beat of the heart I could not de-

fine; indeed, its action was so feeble that his pulse was barely perceptible. I could not distinguish the sounds of the heart. The exhaustion of the patient prevented any more extended examination.

"The autopsy was made twenty-seven hours after death; present, Doctors DeBra, Thuler, Buchwalter, and Manning, of Miamisburg, and Doctors T. D. Davis, Iddings, and myself, of Dayton.

"On opening the chest, the whole of the anterior portion was seen to be occupied by an adventitious growth. The pleural cavity on each side contained about a pint of fluid. There were no evidences of recent inflammatory action about the organs; a few old pleuritic adhesions were found at the apices. On removing the lungs from the cavity, the tumor seemed to be an outgrowth of the superior lobes, but careful dissection enabled us to separate the two structures. The tumor was adherent to, but not a part of, the lung tissue. The latter was perfectly healthy and capable of being fully inflated, excepting a very small portion at the point of attachment. The heart, which had been pushed somewhat out of position, was found intimately attached to the inferior portion of the mass. The aorta and large vessels were completely imbedded, and could not be separated from the cancerous growth without tearing. It required considerable patience and careful manipulation to separate the heart. The heart was then found to be normal in size and healthy. The pericardium was, however, firmly adherent to the surface of the heart, thus obliterating all traces of the pericardial sac. The growth, when separated from the viscera, weighed four and a half ($4\frac{1}{2}$) pounds, and presented, on physical and microscopical examination, all of the characteristics of encephaloid cancer."

PROCEEDINGS OF THE COLUMBUS ACADEMY OF MEDICINE. REPORTED BY
GEORGE S. STEIN, M.D., SECRETARY.

STATED MEETING, *May 25, 1877.*

Dr. Neil, Vice-President, in the Chair.

Medico-Legal Case.—Dr. Loving reported the following case:

A physician, a friend of his, had been indicted for selling whisky, it being claimed that the whisky produced delirium and death. The man died on the third day. The patient was under the care of a physician, who gave him thirty-grain doses of hydrate of chloral every two or three hours, until he had taken, in all, two hundred and ten grains. He took two hundred and ten grains of chloral, and one grain of morphia, in twelve hours.

He said the patient was drunk, delirious, and had convulsions; he took these narcotics, and died after taking the last dose of chloral.

What killed him? What was the cause of death? Was it whisky, chloral, or a laceration of the septum between the ventricles of the heart? Which was found after death?

He was inclined to believe that the man's death was produced by the narcotics, and that a laceration of the septum occurred just before death, the heart being distended with blood, and in its violent movements the septum was lacerated.

Case of Uræmia.—Dr. Oleson reported a case of uræmia, following scarlet fever, for which he had prescribed hard-cider and muriated tincture of iron; but convulsions came on frequently. He then thought of Dr. Pooley's experience with the old-fashioned corn-sweat, in a case of uræmic convulsions, which he reported to the Academy a few weeks ago.

He tried it, and in a half-hour the patient got easy, and improved. He said that the rapidity with which his patient got to sweating, was interesting to him.

Dr. Loving said the corn-sweat is fully equal to any vapor-bath that could be devised. He then spoke of the novelty of the thing, and said that if we were in New York, and commenced putting hot corn into the bed of a patient, they would look upon us as outside barbarians.

Case of Prolapse of the Vagina and Uterus.—Dr. Kroesen then read the history of the following case:

Mrs. D., aged 39, married, has had six children; has never aborted; is about the medium height; has enjoyed good health generally, until within the last two years; during this period has complained of more or less "weakness" in the pelvic region; menses have been regular until within the last four months; complains of a dragging sensation in the pelvis, with but little pain.

Upon examination, it was found that the uterus was pretty well down in the vaginal canal, and the os pressing upon the floor of the pelvis, its body somewhat enlarged; no heat or tenderness of the vagina; no rectal or vesical irritation; no pain in the back or loins; but there was a certain amount of pelvic uneasiness on attempting to walk, with considerable leucorrhœa. He thought, at first, that it was a case of simple prolapsus uteri, and suspected the possibility of pregnancy; but none of the symptoms of that condition being present, and not wishing to catch up a hasty diagnosis, he left the patient with some directions as to local and general tonic treatment.

One evening he was called hastily to see the case, and found that there was a discharge of water from the uterus, and that she was pregnant, and that an obstruction was about to supervene. The following night, was called again to see her, and found her complaining of something pro-

truding from the vagina. On examination, he found a large tumor protruding, apparently as large as a new-born infant's head at full term. It was of a pear shape, the stem end being in the vagina.

A tense congested state of the tumor, with a smooth and tough exterior, was transmitted to the touch. The large end, or base of the tumor was indented and curved in upon itself, and from this part protruded the lower half of a small fœtus.

There was no pain complained of by the patient; no expulsive action of the uterus; only a sense of fullness and throbbing, with discomfort, existed. Physical exploration revealed the uterus to be within the labia, the os enclosing the head of the fœtus with a vice-like grip. An attempt to relieve the head failed, from the firm, constricted condition of the os that held it.

The diagnosis of the case was abortion, with prolapse of the vagina and uterus.

Treatment.—Not being able to relieve the fœtal head, the fœtus were returned, together with the prolapsed vagina, within the labia. This was not attained without some trouble in the tumor, because in a measure strangulated. After it was returned the prolapsed organs failed to remain in situ unless supported by the hand. This support had to be constantly given until the fibres of the os relaxed sufficiently to enable the fœtal head to escape from its embrace. The hips were elevated and the usual treatment given for such conditions; after the cessation of the lochia strong astringent washes for the vagina were prescribed, with general tonic treatment, diet, regimen, etc. The result was good, and the patient recovered without any further trouble.

The cause of this condition was, in his mind, due to a gradual loss of tone in the vaginal walls and subjacent structures, pregnancy furnishing the exciting cause. He thought that during the period that elapsed from her last pregnancy (eight years) a variety of changes in the structure of the parts occurred. The absorption of surrounding tissue and kindred changes that impair the natural strength and tonicity of the vaginal canal might furnish the predisposing cause. The development of the canal and increased weight of the uterus came from the pregnant condition. The enfeebled condition of the sphincter muscles might unite in producing this condition. The occurrence of absorption, uterine and abdominal contractions forcing the abdominal viscera down the canal, might also produce this state of affairs.

STATED MEETING, June 1, 1877.

Dr. Neil, Vice President, in the chair.

Case of Hemiplegia.—Dr. Norman presented a pathological specimen of a brain removed from a man sixty years of age who became hemiplegic three years ago. No complete history of the case could be obtained, except that he had lapses of consciousness—severe pain in the head. A year ago he could not speak or swallow; three weeks ago was struck on the side of his head; no fracture of the skull, but considerable ecchymosis at the place of injury. Post-mortem showed some softening of the right crus cerebri; some atheromatous degeneration of the arteries; all the arteries of any size were plugged with thrombi.

Case of Abortion.—Dr. Pooley presented an ovum, with its membrane intact, of two mouths' impregnation. He said three weeks ago an attempt at abortion was made, which was followed by a slight oozing of blood for a week or two. Last week a severe hæmorrhage took place, with great pain. He then removed the ovum entire. It showed several punctures, which, he thought, were made by an instrument; there were also deposits of fibrin, which were evidences of recent inflammation.

Necrosis of the Carpus and Metacarpus.—Dr. Pooley reported the following case: Nine months ago the patient fell and sprained his wrist; the joint now is inflexible; great swelling on the dorsum; has pain and fever. Has taken iron and quinine for a long time. There were no sinuses. He made two lateral incisions, and all the bones of the carpus and ends of the metacarpal bones were removed, some of them, piece-meal.

Since the operation the patient has done badly; has no pain or fever, supuration normal, and pus healthy. He has gradually sank into a condition of lethargy and coma, preceded by delirium. He has no chills nor sweating; pulse 92, full and regular; arteries are hardened by calcification. He lies in a semi-conscious state; talks deliriously; his face is flushed, but not hot; refuses to take food. He thought his condition seemed to be that of cerebral anæmia.

Case of Procidencia Uteri.—Dr. Loving gave an outline of a case of procidentia uteri, in which pregnancy took place, and which he thought a rare occurrence. The lady was twenty-one years of age; has been married eighteen months. When he first saw her she was pregnant; complained of great pain in the hips; she was unable to walk, and had great difficulty in voiding urine. She objected to an examination, and went on in this condition to her full term. He was in attendance at her labor, and she refused again to have the necessary examination made, until she was well advanced in labor. Immediately within the vulva the os uteri presented; the labor went on satisfactorily and she gave birth to the child. Every thing went on well after the labor, except that the uterus did not return to its place.

Sometime after this the patient went to Illinois to consult a gynæccologist for treatment, but the last time he had heard of her she was hardly able to walk. He also remarked that this lady suffered with procidentia uteri long before her marriage, and he considered it an uncommon case.

Laceration of the Perinæum.—Dr. Loving said that modern teachers in obstetrics urge the propriety of attending immediately to laceration of the perinæum. In his time he was taught to wait until after the labor; until the wound had healed over. He had a case once which he stitched, he put in three stitches. His teacher advised him to take them out, which he did.

Two weeks ago he was called to attend a lady in labor—primipara of a rigid fiber—tense habit; at the last pain laceration of the perinæum occurred, not involving the rectum. He immediately put in three stitches, which were removed on the fifth day, the laceration being entirely healed. This he considered exactly the thing to do, and to do it at once.

Drs. Neil and Loving, delegates to the American Medical Association, then gave an abstract of the proceedings and workings of the different sections of the twenty-eighth annual meeting of the Association, held lately in Chicago, Illinois, for which a vote of thanks was tendered them by the Academy.

STATED MEETING, June 15, 1877.

Dr. Neil, Vice-President, in the chair.

Fracture of the Clavicle.—Dr. Kroesen reported the case of a child, nine years of age, who fell from a wagon to the ground; the shock of the fall was received on the back, producing a transverse fracture of the clavicle on the opposite side of the shoulder.

Dr. Pooley said this was an interesting case, and one of unusual occurrence. He thought the fracture was produced by violent contraction of the muscles of the back, and that it could only be accounted for in this way.

Drs. White and Loving also said the fracture in Dr. Kroesen's case could only be accounted for by muscular contraction.

Cholera Infantum.—Dr. Loving then inquired of the members of the Academy whether cholera infantum and acute inflammatory diseases of the alimentary canal were not prevailing more than usual in the city at this time. and what was their experience with it? He thought it rather early in the season for these diseases, but he has observed that the first warm weather in June generally brings cholera infantum, cholera morbus, and acute diarrhœa, and that if the weather continues very warm these diseases continue through July and August; if however, it gets cool, dysentery will appear, and if it changes again to a warmer temperature, cholera infantum and cholera morbus come on again. He said if this be

true, we can, to a certain extent, prevent and avoid them, and prepare and regulate ourselves for them.

Drs. Nunnemaker, Kroesen, Neil, White, and Stein, then related their experience with these diseases.

Dr. Nunnemaker inquired of Dr. Loving whether wet weather had any influence on cholera infantum, and how would he explain it?

Dr. Loving said he did not know if moisture had any influence; if it had, he had no explanation; but he had observed that the temperature of the weather produced the changes which he alluded to. He also observed that in wet, cold summers dysentery is more common than in dry summers.

Dr. Fullerton wished to know whether the treatment could not be improved; the great cause was *heat*, and if we could get command of the temperature, we would have better results in our treatment. If we could devise some apparatus so as to regulate the temperature of rooms, he thought it would influence very favorably this disease.

Dr. Pooley said his experience with cholera infantum was, that if the weather became very warm, suddenly in June, it produced cholera infantum, and also that he was always more solicitous about those cases than with those that occurred later in the season.

In regard to treatment, two things were very important. The first was that concerning the subnitrate of bismuth. If this agent was rightly used, it was a very valuable remedy, and if not, it was one of the most valueless. In small doses of five or six grains, it was of but little value, but in half-drachm doses it was an admirable remedy. He then related the following case: "Was called to see an infant in the evening, three months old; it looked just as if it was dying; vomiting and purging incessantly; had all the symptoms of collapse; large discharge, of rice-water character; ordered half-drachm doses of subnitrate of bismuth to be given every hour.

The result was, in the morning the child was almost well, the vomiting and purging had ceased.

In older children larger doses must be given, and the remedy must be pushed to do good. If the bismuth does no good in twelve hours we must resort to some other remedy.

The second thing to do is to use cold water compresses to the abdomen. The child should lie on a hard bed, be lightly covered, and the abdomen covered with cold compresses.

This relieves the pain and heat of the abdomen. He also remarked that there was something remarkable in the slight changing of location. Sailing down a river, or visiting some island, or going half a mile into the country had a very marked influence over the disease. When we have

severe and threatening symptoms; when the child is exceedingly emaciated, and after the acute symptoms have passed, then he would recommend salicine, one grain every two or three hours, and to annoint the whole body with cod-liver oil.

Dr. Kroesen spoke of the influence of locality, and agreed with Dr. Pooley's remarks. He thought it had a great influence over this as well as in some other diseases.

Dr. Loving said that in the use of bismuth we must recollect that it is sometimes adulterated with arsenic, and the large doses might prove injurious. It was also a question with some whether the beneficial effects were not due to the arsenic rather than to the bismuth. He also had observed that after the administration of bismuth the breath had an alliaceous odor, and that it could generally be observed in a few hours after taking bismuth. Another important thing in the acute stage of cholera-infantum was the administration of cold water. The almost incessant craving for water was, to him, a most painful symptom. He had labored under the delusion that it aggravated the vomiting and the disease. He now allows his little patients to drench themselves with water; he gives them as much as they will drink.

Ohio State Medical Society.—Dr. Pooley then, at the request of the Academy, gave a short sketch of the proceedings of the Ohio State Medical Society held during the week at Put-in-Bay. He said the meeting was not large but pleasant, everything was pleasant, agreeable, and harmonious. There was not a breath of ethics, etiquette, or professional honor. The Society will meet in Columbus on the third Tuesday in May, 1878.

STATED MEETING, June 22, 1877.

Dr. P. M. Wagenhals, President, in the chair.

Case of Iodism.—Dr. Oleson reported a case of iodism, in which five doses of iodide of potassium, five grains each, produced this result. It was given for an ordinary eruption on the leg. The symptoms were lachrymation, swelling of the eye-lids, coryza, and an acne eruption over the body.

Dr. Loving inquired whether the patient had taken iodine or mercurials before, or whether it was not due to an idiosyncrasy. He referred to a case of arsenical poisoning, which was produced by taking three drops of Fowler's solution.

Dr. Oleson said she had taken no medicine for fifteen months.

Dr. Pooley thought this an interesting and important case. Some persons can take no iodine at all, others can take one hundred grains of iodide of potassium at a dose. It is no more likely to produce iodism in

large doses than small ones. A good plan is to commence with small doses and increasing them rapidly. In syphilis there is a point of tolerance, and when this point is reached the symptoms disappear.

Case of Poisoning.—Dr. Loving reported briefly a case of poisoning with rhus toxicodendron. He said that a solution of iodide of potassium will relieve it, but from his experience he found that

Sodæ sulphite, 3ii.,
Chloral hydrate, 3i.,
Aqua, oi.,

M. For a lotion.

a much better remedy. It relieves in a very few hours.

Chronic Bright's Disease.—Dr. Norman reported the following case: Mr. ———, aged forty years, two years ago had typhoid fever. A week ago, in the evening, was taken with a chill, followed with fever, pulse 120, temperature 103½. Supposing it to be an ordinary intermittent, prescribed a cathartic and thirty grains of sulphate of cinchonidia. Next morning better—next day had suppression of urine, and the next morning symptoms of uræmic poisoning. A tablespoonful of urine was obtained by the introduction of a catheter, and upon examination it was found to be highly albuminous. The symptoms soon were double vision, delirium, contracted pupils. He grew gradually worse and died.

Post mortem: Kidneys much enlarged with chronic inflammation. The patient died from chronic Bright's disease.

Dr. Pooley said we should never prescribe for patients who complain of severe and persistent cephalalgia until we first examine the urine. This should be the rule of our lives. He also thought Bright's disease an unfortunate name.

Dr. Loving said, a few hours before death several things in this case were important and interesting to him. What was the cause of the extreme itching of the skin? What was the cause of the extreme contraction of the pupils, and what was the cause of the extreme jaundice of the body? The liver showed no disease, and the patient had taken no morphia for twenty-four hours. Could acute or chronic inflammation of the kidney cause these symptoms?

Cancer of Stomach and Liver—Case of Acute Peritonitis.—Dr. Frankenberg presented a pathological specimen of cancer of the stomach and liver, removed from a patient who died in St. Francis Hospital. The entire surface of the stomach was ulcerated, involving the spleen to some extent. The liver was full of nodules. He also presented the kidneys of a patient who died of acute peritonitis. The abdomen was very much distended, pus in the abdominal cavity, the peritoneum was inflamed and injected. The appearance of the kidneys was that of what is called the "white

kidney." On section it showed fatty degeneration. He also stated that the patient had pericarditis, there being four or five ounces of serum in the pericardium.

Dr. Pooley said the specimens were interesting and instructive. The death of the patient from acute peritonitis—it was not suspected at all—but the post-mortem showed marked peritonitis. The patient died suddenly; he had neither pain nor tenderness. He stated that this is the condition in some cases, especially in those of chronic kidney disease. The peritonitis is provoked by the kidney disease. In such cases, we should be on the look out, especially if there is albuminous urine. He stated that the thermometer might have told what was going on. The suddenness of death was an interesting fact. He thought that a splanchnic shock was the explanation of the sudden death.

In regard to the cancer specimen, he said that there was no persistent vomiting as there generally is in cancer of the stomach alone, and that this was generally so in cases of cancer of stomach and liver. The occurrence of cancer of the stomach and liver he thought a rare event. He then raised the question as to which was the primary lesion.

The subject was further discussed by Drs. Pooley, Reed, Frankenberg, Neil, and Stein.

STATED MEETING, July 6, 1877.

Dr. P. M. Wagenhals, President, in the chair.

Prophylaxis of Cholera Infantum.—Dr. Oleson read a paper on this subject. He gave a short sketch of the disease—stated that it carried off seven-ninths of the infants in the four hot months of the year. The first prophylactic was proper alimentation; the second, protection from excessive heat; and the third prevention of dental irritation.

[The paper was referred to the Editor of the Ohio Medical and Surgical Journal for publication, and appears in this number.]

Dr. Kroesen reported several cases of cholera infantum. He thought improper alimentation the great cause in these cases.

Dr. Loving thought the cause in the main was the hot weather. The disease generally prevails from the middle of June to the middle of September, and it could only be explained on the supposition of the excessive heat. Heat is the main factor—food and dental irritation are secondary causes. He corroborated every word that was said in favor of the bromide of potassium in the paper.

Dr. Oleson said, as mothers were in the habit of giving their infants soothing syrups and cordials and a variety of domestic teas, that it was a far better practice to give them bromide of potassium. He also believed in dental irritation as a cause, and had relieved many children by the practice as advocated in his paper.

The subject of proper food for infants, in connection with cholera infantum, was further discussed by Drs. Frankenberg, Oleson, Loving, and Wagenhals.

Resolutions—The committee appointed to draft resolutions on the death of the late Dr. Otto Zirkle, reported the following:

WHEREAS, It has pleased Divine Providence to remove from his sphere of duty and usefulness the late Dr. Otto Zirkle, a member of the Academy; therefore be it

Resolved, That we take pleasure in recognizing the ability and worth, both public and private, which distinguished the character of the lamented deceased.

Resolved, That we deeply sympathize with his family and friends in their affliction.

Resolved, That a copy of these resolutions be transmitted to the family of the deceased.

J. C. KRÖESEN, M.D.,
O. FRANKENBERG, M.D.,
GEO. S. STEIN, M.D.,
Committee.

New Members.—Dr. R. Gundry, Dr. D. A. Morse, and Dr. H. G. Landis were reported upon favorably by the committee on admissions, and they were then unanimously elected active members of the Academy.

Adjournment—Dr. Neil moved that when the academy adjourns, it adjourns not to meet again until the first Friday in September. Adopted.

On motion, the Academy then adjourned to meet again September 7, 1877.

CENTRAL OHIO MEDICAL ASSOCIATION. REPORTED BY GEORGE S. STEIN, M.D., ASSISTANT SECRETARY.

STATED MEETING, June 7, 1877.

The Central Ohio Medical Association met, pursuant to adjournment, at Council Chamber, City Hall, and was called to order by the President, Dr. P. M. Wagenhals.

Dr. Gay stated that as there appeared to be no paper he would relate a *Case of Perforation of the Bowels* in a farmer near this city, happening some years since, and brought about by his accidentally swallowing the egg of a bot fly, and ther by generating a bot larva, which brought on severe pain, inflammation and perforation of the lower bowel.

After some weeks of severe distress the worm discharged through the opening made in the bowel, and after quite a good deal of watery discharge from the opening in the bowel and through the bladder the man recovered and is now well.

He thought this instance should be a warning and a caution to those who handle horses to beware of the eggs or nits of the bot-fly.

Dr. Pooley thought the case a singular one, and described the effects produced by larvæ from the eggs of the bot-fly in the stomach and bowels, and the way to get clear of them.

Dr. Loving then read the history of a case of

Extra-Uterine Pregnancy, which he had reported at the last meeting, and described the good effects of the treatment of the case by electricity, as instituted by him.

He promised a further report (by permission), and thought success would follow the treatment pursued.

Dr. Wirth spoke of the difficulties in making out the diagnosis.

Dr. Loving thought he had described the case so fully in his first report that no one who heard it could well doubt the diagnosis of the case.

Dr. Pooley spoke in corroboration of the views of Dr. Loving, and described more fully the prominent symptoms by which such cases are determined.

Dr. Wirth questioned, from what he had heard from the reading of Dr. Loving's first report, the propriety of deciding, positively, on the diagnosis of the case.

Dr. Loving then read from his first paper the description of the symptoms of the case, and the means employed to determine the diagnosis, and that the conclusion was arrived at by considering the case in all its bearings, and asked Dr. Wirth to give a diagnosis if he thought it anything else. He spoke of the progress of the case, and of the treatment, and that he had no other motive than to give all the particulars in the case as being a singular and important one, and to forward the progress of medical science, and that the result would be reported to the Society hereafter.

STATED MEETING, July 6, 1877.

Dr. A. Follett, of Granville, Ohio, called to the chair.

Dr. D. N. Kinsman read a paper on

Salicylic Acid.—He gave the history of its origin, mode of preparation, its solubility, tests and therapeutics. He stated that in eighty per cent. of all cases it reduces the temperature, while in twenty it increases it. It has accumulative effects. The favorite mode of administration is ten grains every hour. It has been used in a great many diseases, but its greatest reputation is in acute rheumatism, relapses being much more infrequent when treated with salicylic acid than with alkalies. It has some value in rheumatism, but is far from being a specific.

In scarlet fever, diphtheria, and typhoid fever, he thought it a very valuable addition to our treatment.

Dr. Helmick relates the history of a case of acute rheumatism, in which he gave salicylic acid a fair trial, with but little benefit. He then gave salicine, and blistered the joints once in forty-eight hours; it produced great relief.

Dr. Turney stated that salicylic acid had great value in acute rheumatism. He gave the history of a case of rheumatic pericarditis, in which he gave ten-grain doses, and in six hours it reduced the temperature greatly, and by the third day the patient was well. In another case, in six hours it produced great relief of pain. He knew no remedy so valuable as salicylic acid in acute rheumatism.

Dr. Kinsman said that it is known to have produced relief by a single dose of ten grains. It reduces temperature more promptly than any other agent, and he knew of no treatment that relieved the pain so quickly.

But in diphtheria the most striking statements were made—in one hundred cases only three deaths occurred.

Dr. Landon was not prepared to accept this statement of its value in diphtheria. He believed that the disease was due to a blood poison, and that it must be treated constitutionally; local remedies will not do. In rheumatism his practice was with alkalies and morphia; in diphtheria, iron and quinine.

Dr. Turney called attention to the power of salicylic acid decomposing the urine, this he thought a valuable hint in regard to its use. It also had considerable resemblance to quinia in reduction of the temperature. He preferred quinine as the next best remedy for the treatment of rheumatism.

Dr. Turney offered the following resolution:

Resolved, That the Executive Committee select some member at each meeting of this society, whose duty it shall be to choose and announce to the society such medical or surgical subjects as he pleases, and prepare a suitable written essay for the following meeting of the society; that this essay should be the subject of discussion for that meeting, and that any member thus selected failing to furnish such essay at the meeting designated, shall pay a fine of three dollars into the treasury of the society for such failure, unless released from such fine by a majority vote of the society.

Election of Officers.—Dr. Landon, Chairman of the Executive Committee, announced, as this was the annual meeting, the first thing in order at the afternoon session was the election of officers.

The following officers were then elected for 1877 :

President—Dr. P. M. Wagenhals.

First Vice-President—Dr. A. Follett.

Second Vice-President—Dr. Z. F. Guerin.

Secretary—Dr. O. Johnson.

Assistant Secretary—Dr. G. S. Stein.

Treasurer—Dr. T. B. Asbury.

Board of Censors—Dr. C. P. Landon, Dr. D. Halderman, Dr. Z. F. Guerin.

Dr. Turney then read a paper on *Solid Food in Typhoid Fever*. He discussed the rationale of digestion, and thought it was an error that fluid food was preferable in a great many diseases, and in typhoid fever particularly. He claimed that solid food was preferable in all cases of this disease. The paper was received and referred for publication. *

Dr. Kinsman said he was long since a convert to the theory of digestion as promulgated in Dr. Turney's paper. He accounted for the diarrhœa in typhoid fever by the excessive production of heat.

Dr. Turney said that typhoid fever was self-limited, as much so as measles, and that there was such a thing as starving a patient to death, as the symptoms were similar to those of typhoid fever itself.

Dr. Hamilton exhibited a pathological specimen of ovarian tumor. The tumor weighed fifty pounds. He also exhibited the pedicle from which the tumor was developed.

Dr. Hamilton then read a paper on *Plaster of Paris Dressings in Fractures*. He said he had used this dressing in twenty cases: In several fractures near the elbow joint, in fractures of the thigh, and in fractures of the leg, he had succeeded admirably with this kind of treatment. He does not think the plaster dressing applicable in compound fractures.

STATED MEETING, August 2, 1877.

Dr. Z. F. Guerin, Vice-President, in the chair.

Fistula in Ano.—Dr. J. Helmick reported two cases of fistula in ano, which he was treating by dilatation. He used the sea tangle tent, with carbolic acid and the red oxide of mercury. He then inquired whether this was the right practice, and whether these fistulas would heal from the bottom without resorting to an operation. He said he used the tents simply to dilate, so as to apply remedies to the part to produce granulations.

Dr. Beverly reported a case of a similar character. The patient was a female, had a cough, was of a scrofulous diathesis, being reduced in health considerably. An abscess formed in ilio cæcal region, which he lanced. There was no opening in the intestine. A large quantity of pus

* See present number of this Journal.

was discharged from the abscess. He injected carbolic acid and bismuth several times a day, which healed it up very rapidly.

Dr. Thompson reported a similar case that occurred in 1849. He gave the history and treatment, and stated that the patient was cured spontaneously as a result of an attack of cholera.

Dr. Kinsman read a paper on *Pott's Disease of the Spine*. He gave the history of the case, and its treatment with Taylor's spinal brace, Sayre's splints, and the plaster of paris jacket, which benefitted and improved the patient greatly, and in fact seemed to have cured him. He stated that after this result had been obtained, the patient became tuberculous, and finally died. He claimed that when tuberculosis was developed in the course of this disease of the spine, no remedy or treatment will be of any avail. The paper was received, and the discussion deferred until the next meeting.

Dr. Baldwin read a paper giving the history of a case of

Hair-Pin and Calculus in Bladder.—He exhibited the hair-pin and calculus, and considered the case a singular and unique one. The average thickness of the calculus was about one inch; weight, one and three-fourths of an ounce. The urethra was dilated, and the stone seized with a pair of long forceps. Being too large to pass, an effort was made to break it, which was unsuccessful. It was again seized, and one-half of the pin came away, but the stone could not be extracted. A second effort to break it was more successful, but still it would not pass. An incision in the meatus was then made of an eighth of an inch, and one-half of the stone, containing the remaining half of the pin, was brought away. There was no difficulty in removing the other portion.

Drs. Landon and Gay spoke of other cases.

Dr. Halderman reported on the sanitary condition of the Ohio Penitentiary.

Dr. Beverly reported a case of *phagedenic ulcers*, Dr. Gay a case of *gangrene*, and Dr. Loving on the case of *extra-uterine pregnancy*, of which he made two reports at previous meetings of the Society.

Dr. Wirth reported a case of

Acute Gastritis.—Lady, æt. 48; slender, delicate, of nervous temperament; had been suffering from occasional vomiting for a week before he saw her. He found her retching all the time, having only temporary relief for an hour or two. She stated that she had vomited bilious matter, but when he saw her she vomited nothing but what she took. Pulse never more than 90, and sometimes as low as 70. No excessive pain, but a burning sensation; symptoms aggravated towards evening. Complains also of slight headache, believing it to be a case of remittent fever, he directed his efforts to allay the excessive irritability of the stomach, pre-

scribed small doses of calomel and ipecac, with no effect whatever; then ordered hydrocyanic acid, then chloroform and morphia, then a mixture mainly containing carbolic acid. Quinine was attempted to be administered every day, but all these medicines seem to be absolutely without any effect. Counter irritation to the stomach—mustard and warm application, and ice to allay thirst. Seeing that no medicine nor food was retained, and that she was rapidly losing strength, he directed injections of beef tea to be given and hypodermically one-third of a grain of morphia. Having been informed that she had been in the habit of using morphia, and that she had been formerly treated by Dr. Hamilton for a similar attack, requested a consultation with him. He confirmed the diagnosis, and advised no other treatment. The first injection of morphia having no effect, it was repeated in four hours, and this only procuring a certain degree of comfort and rest, without any narcotic effect. The next morning her condition was as bad as ever, and another injection of a third of a grain of morphia was given. The patient became quiet but weaker, and finally died, remaining perfectly clear in mind until fifteen minutes before her death.

Drs. Beverly, Gay, Farrel, and Stein, discussed the case.

The Society then, on motion, adjourned until the first Thursday of October next.

[Full reports of the Society proceedings will appear in the Journal regularly.]

NOTICE.

One of the advertised numbers (Nov. 1851) of the Ohio Medical and Surgical Journal, with a number of other journals, has been received at Starling Medical College. This donation is from Dr. J. H. Clark, of Mechanicsburg, who will please accept our thanks. If others who now destroy their medical journals would send them to the Library, they will materially assist in creating a collection of journals that will be of great value in the end. Any old books are solicited.

Respectfully,

O. FRANKENBERG, M. D.,

Librarian.

RESIGNATION OF PROF. WORMLEY.

On the 25th of July, Prof. Theodore G. Wormley resigned the Chair of Chemistry in Starling Medical College, which he has occupied since 1854. His career during this long period is well known to the profession. Few men in the United States have reached the same eminence in chemistry, more especially in the chemistry of toxicology.

The Faculty of Starling College naturally regret to part with a colleague so long identified with the institution, and so excellent as a teacher, but they rejoice that Prof. Wormley considers his new position a promotion, and wish his success in Philadelphia may be in proportion to the great elevation which he has attained. If energy of mind and body, unimpaired by years, can elevate the Professor above his present status, there is no doubt that his success is assured.

Starling Medical College is a nursery of medical teachers. A matriculant teaches in Rush Medical College, an alumnus in the Ohio Medical College, and another is at Fort Wayne, and now she is called on to supply the University of Pennsylvania a teacher in one of the most important branches. Her standard has never been lowered, and her aim is now as heretofore to send forth men equal to any position to which they may be called. Regret in parting with Prof. Wormley is softened materially by the fact that the trustees have succeeded in filling the blank in the roster of the Faculty with the name of Prof. Sidney A. Norton, of the Ohio Agricultural and Mechanical College.

Prof. Norton is a genial gentleman and ripe scholar, a facile writer, and a fluent and attractive lecturer, bringing to his new position the experience gained abroad in the laboratories of the German universities, in the lecture room of Miami Medical College, and in the position which he still holds in the Ohio Agricultural and Mechanical College, the laboratory of which is perhaps the finest in the country. The works which he has already completed, and one which will be complete within two months, place him high in rank among writers of educational books. His book on natural philosophy is a model among the many on that subject, and his forthcoming Principles of Chemistry will fill a want long felt among students, especially medical students, and those who contemplate making the science of chemistry a profession. His time is so arranged that it is not possible that the two positions can clash.

With the advantages gained by his connection with the medical college, it will be easily seen that an analytical chemist is ready to fill the place so long occupied by Dr. Wormley.

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ORIGINAL COMMUNICATIONS.

ART. I.—*New Method of Reduction of Dislocation of the Hip.* By S. J. ALLEN, M.D., White River Junction, Vermont.

One day in the month of March, 1841, at which time I was a student of medicine in the office of John L. Swett, M.D., of Newport, N. H., I was riding in my sleigh, about three miles south of the village, and, passing a house situated some six rods from the road, I heard an outcry. Looking in the direction of the alarm, I saw a woman, Mrs. Perry by name, who, in stepping from the door, had slipped and fallen upon the icy ground. Hitching my horse, I walked rapidly towards her. As I came near, two men came out of the house, and, lifting her erect, assisted her inside. While they were bearing her along, I noticed that the right foot turned in upon the dorsum of the left; and I said to myself—"Case of dislocated femur upon the dorsum illii." Expressing my opinion to the friends of the woman, I said, "You must send for Dr. Swett to reduce it." A messenger was directly dispatched, who upon the way met Dr. Mason Hatch, a respectable practitioner of medicine, but less skilled in surgery. The doctor being requested to call, did so, and examined the hip by passing his hand over it, saying that he guessed the hip was not out of joint; and bringing from his sleigh a box of Kittridge's ointment, directed it to be applied three times a day to the hip, saying at the same time that he thought the patient would be well in a few days. After the learned doctor's departure, I repeated my opinion that the hip was

dislocated, and that Dr. Swett must be summoned to put matters right. While the horse was being harnessed the second time, I concluded to make some examination of the limb for the purpose of reassuring myself of the correctness of the diagnosis. Grasping the leg with my right hand, I flexed the leg upon the thigh, and the thigh at right angles with the body. The old lady, for thus I considered her then, although but forty, complained of my hurting her; and somehow the limb became fixed in the position, and could not well be moved. It seemed locked, and could not be moved further without considerable force and pain. With the view of relieving my patient from this uncomfortable state, I stepped upon the bed, and, standing with her limb between my own limbs, and placing the dorsum of her foot upon my nates, and my right hand under the bend of her knee, I lifted her hips from the bed, holding her steadily in that position a few seconds, when the head of the dislocated bone slipped into the socket, accompanied by that peculiar audible shock which so delights the surgeon's ear. She immediately exclaimed, "I am well! I am well!" Of course, it was unnecessary to send for Dr. Swett now, so the horse was returned to the stable.

On my return to Newport village, I found Dr. Kittridge, of Claremont, N. H., present with Dr. Swett, and immediately related the incident as above described. I was informed by the two justly eminent surgeons that it was not a case of complete luxation, but that the head of the femur got caught upon the edge of the acetabulum, and that my manipulation had, fortunately and accidentally lifted the bone into the socket. This announcement made my hat and coat seem very small; but I accepted the situation with a submissive grace, although I never forgot the method of reduction. Keeping it in mind, I intended to apply it in my next case, which I confidently expected to meet with sooner or later.

September 21, 1848, I was called to a little girl ten years

old—Minnie Clark—who, while climbing upon a heavy gate resting upon the fence, fell upon her back, the gate falling upon her, dislocating the right femur upon the dorsum illii. I attempted reduction by the method resorted to in the case of Mrs. Perry, but failed, in consequence of the great rigidity of the muscles, the light weight of the body of the child, and the want of an anesthetic. So I sent for Dr. Dixi Crosby, who reduced it with Jarvis's adjuster, after saying that he disliked to apply so powerful an instrument to so young a subject, fearing that he might separate the epiphysis at some point. Jarvis's adjuster was very generally used at that time, and in that vicinity, to reduce dislocations.

The 16th of July, 1872, I was called, in consultation with Dr. Sperry, of West Hartford, Vermont, in the case of a French Canadian, Lewis Baumhar, a section hand on the Central Vermont Railroad, who, while helping to carry a track-rail, fell on his right knee, the rail slipping from his shoulder and falling upon the sacrum, dislocating the right femur upon the dorsum illii. When I arrived, Dr. Sperry asked me if I had my pulleys with me. I answered that I had the pulleys which the Almighty furnished me with. Said the doctor, "You can't set the leg without pulleys. I answered that I could try. After the patient was fully chloroformed, the muscles being thoroughly relaxed, I stepped upon the bed, and flexed the leg upon the thigh, and the thigh at right angles with the body, and placing his foot between my legs, and my hand beneath the bend of his knee, I lifted the hips well from the bed, and held them immovable in that position less than half a minute, when the head of thigh bone returned into the socket with a sensible and audible shock. The reduction was accomplished so quietly that the doctor did not notice when it occurred, nor did he understand the method used, and at first questioned the fact of its having been reduced.

September 25, 1874, I was called, with Dr. Davis, of Leb-

anon, New Hampshire, in the case of N. S. Huntington, of Hanover, New Hampshire, a brakeman on the Central Vermont Railroad, who, while coupling cars at Claremont Junction, had his right hip dislocated on the dorsum. Chloroform was administered by Dr. Davis, and I reduced this dislocated femur in the same manner as in the case of Baumhar, and with the same facility.

January 13, 1877, called, in consultation with Dr. B. F. Eaton, of Hartford, Vermont, to see A. Woodbury, a freight brakeman, who had his left hip dislocated while coupling cars at Bellows Falls, Vermont. Dr. Eaton gave the chloroform, while, by the same method as in the above described cases, I returned the dislocated bone to its proper place in less than half a minute.

These four cases are all I have to relate, as testing this new, easy, and, I claim, unfailing method of reducing luxations of the hip joint. It will be noticed that they are all cases of dislocation on the dorsum illii, but at the same time we should be reminded that the dislocation on the dorsum is the type of all luxations of the femur, and that before the reduction is accomplished in other and rarer forms, the head of the thigh bone is thrown on the dorsum by manipulation before it can be returned to the acetabulum. Indeed, it is not uncommon for the head of the femur to be changed from one position to the other, several times during the manipulations, before it can be returned to the socket, in cases of pubic and ischiatic forms of displacement, by the method of Nathan Smith.

By my method, the lower part of the body is lifted from the floor and held immovable. This maneuver relaxes the femoral ligament, and the weight of the hips and opposite limb rotates the body outward, producing sufficient abduction and extension to quietly to draw the acetabulum over the head of the femur, and at the same time compelling the pa-

tient to become "particeps criminis" in case of a suit for mal-practice.

[Dr. Allen requested me, which is surely unnecessary, to add a word of indorsement to his article.

This I most willingly do, for his method is so beautiful and simple, and seems so rational withal, that we can only wonder, as in many similar cases, that it was not thought of long ago. But as the final acceptance of any surgical procedure must be based on the result of actual trial and experience, we would urge upon our readers to try the new method, carefully following the directions of its originator, and publish their results.—EDITOR.]

ART. II.—*A Case of Extra Uterine Pregnancy*. BY STARLING LOVING, M.D., Professor of Theory and Practice in Starling Medical College, and H. G. LANDIS, M.D., Professor of Obstetrics in Starling Medical College.

Mrs. X., æt. twenty-eight, dark hair, dark complexion, well formed, inclined to corpulency. General health good. No local disease or abnormal state until the present attack. Pluripara. Last child born after normal labor, February 3, 1872. Menstruation returned in June, 1872. Health perfect since, four and a half years. Menstruation entirely regular. Last menstruation January 10, 1877. It was scanty and had an unusually heavy and unpleasant odor. Soon after, she experienced occasional nausea, mostly in the morning, and having no flow on the 10th of February, when she expected it, concluded that she was pregnant.

At the latter date, however, pain in the back and loins was felt, and had only partially subsided, when, on February 19, she applied for treatment. A specular examination revealed a patch of granular erosion on the anterior lip of the cervix, while the edges of the entire os uteri were similarly affected. There was slight anteversion of the womb, and a scanty, creamy leucorrhœa. Deeming these symptoms suf-

ficient to explain her condition, appropriate treatment was instituted. On February 22d, she was again examined and the treatment continued, her condition having somewhat improved. On February 23d, she was suddenly seized with violent abdominal and lumbar pain, accompanied with tenesmus, coming on while at the water-closet, just after the act of defecation. This pain, which was paroxysmal and colicky in character, subsided soon after a dose of morphine and chloral combined had been administered, but perhaps, as the further history shows, not on account of its influence.

Attacks of pain, similar in character, came on again; at first every day, then every two, three, or four days. On one occasion, a half fluid ounce of laudanum was used in fifty minutes with barely the effect of relieving the pain. On another, five fluid drachms of laudanum in the course of an hour, followed by the hypodermic administration of one-half grain of sulphate of morphia, was required to relieve the suffering. This paroxysm occurred March 10th, after which the patient was given hypodermic injections three or four times daily (atropia was presently added with excellent effect), in order to prevent recurrence of the spasmodic pain.

Up to February 26th the os uteri had been closed by mucous, but on that day a very slight flow of blood (perhaps a half drachm) occurred, after which the os was found sufficiently patulous to admit the first joint of the index finger.

From this date the womb slowly settled in the pelvis, at first maintaining its anteflexion, and then having its axis coincident with the pelvic curve. Simultaneously a tumor began to be evident behind the cervix; not in, but in the place of Douglas's cul de sac. The womb ceased to descend in about a week, after which it ascended until, by March 17th, the os could be felt high up, and just behind the pubis. The ascent was caused apparently by increase in the size of the tumor, which *pari passu* could be felt more prominently.

By the 1st of March it was quite evident that the womb was enlarged, and in view of all the symptoms, extra uterine pregnancy was suspected, all the more, as with the development of the tumor in the pelvis, there was not any fever or other indication of inflammation, except local tenderness, which was not excessive. If there was extra uterine pregnancy, the womb, though enlarged, would be found empty. It was decided to pass a sound to ascertain definitely. A sound was passed with ease three and a half inches. A flexible catheter was afterward passed without resistance four inches, and allowed to remain a few hours. To satisfy a consulting physician, a few doses of fluid extract of ergot was administered. This produced no effect except to cause nausea. These operations were performed, and the ergot administered on the 4th of March. A few uterine contractions were caused by the presence of the catheter, aided perhaps by the ergot, during which not only the outline of the womb could be traced in the hypogastrium, but also an irregular tumor associated with it in an ill-defined way, and which was also subject to rythmical contractions, more or less apparent, it becoming more tense and harder during their continuance. This tumor appeared to extend completely across the pelvic brim, but was harder and more noticeable just above the left groin.

No hemorrhage or other discharge followed the uterine contractions until March 7th, when an apparently menstrual flow began, having the usual characteristics, though as it progressed some clots passed. A close watch was kept and inspection made on all that was passed, and on March 9th an apparent clot, the size of a hickory-nut, was discovered, which, when unrolled and placed in water, proved as we thought, to be an unmistakeable strip of decidua. It was two and one-half inches long by one inch in width. On the following day (March 10th) two large strips passed together, with a few smaller shreds. The character of these strips

was evident, both by gross and microscopical inspection, being richly supplied with tortuous blood-vessels, and exhibiting decidual cells. The decidual lining had the somewhat characteristic velvety feel. After the passage of these strips, on March 10th, a finger was introduced into the uterine cavity and its emptiness demonstrated. A conjoined rectal and vaginal exploration enabled us to locate the lower segment of the tumor, between the uterus and rectum, in the retro uterine pouch. Change of posture did not appreciably alter the position of the tumor; perhaps it became more distinct above the brim of the pelvis when the patient was placed upon her elbows and knees, but no other change could be detected.

The paroxysms of pain greatly weakened the patient. During their continuance, the pulse became quick and wiry, and decidedly increased in frequency, while the body was bedewed with cold sweat. There was almost constant pain in the back, no doubt in great measure from the pressure of the tumor upon the parts within the pelvis.

Partly from the pressure of the tumor, and partly from the effect of repeated doses of morphine, there was rather persistent constipation.

From the same causes the functions of the bladder were performed imperfectly.

With the recollection of the extreme difficulty of making an accurate diagnosis of abdominal tumors, and the many sources of error in the signs of the early pregnancy, especially of abnormal pregnancy, in the early stages constantly before us, after carefully considering all the symptoms objective and subjective which have been detailed with the history of the case, we decided that our patient was suffering from extra uterine pregnancy, probably tubo-abdominal in character. We were led to this conclusion from what has already been stated, and from the following additional facts: A tumor of sudden growth, only slightly sensitive, obscurely

fluctuating, and exhibiting few, if any, of the other symptoms common to swellings from inflammation, filling the larger portion of the pelvis, could be one only of a few things.

From the absence of extreme tenderness, of febrile symptoms, of rigors and sweats (except during the paroxysms of pain), and of the symptoms of acute inflammation generally, it could not be pelvic cellulitis.

It must, then, be an enlarged ovary, a hæmatocele, or extra uterine pregnancy.

It was not probably the first, because of its shape, its immobility, its rapid growth, and more particularly because of the symptoms which preceded its appearance and which accompanied its development throughout.

If an hæmatocele, it should present a more uniform outline, be more nearly spherical in shape, and more moveable; its development should have been less gradual and more quickly followed by fever and other evidences of constitutional disturbance, which, with such regularity, mark the occurrence of this accident. Hæmatocele does not commonly, if ever, continue to increase regularly during a period of several weeks, and, except as an accident of parturition, is usually of smaller size than the tumor under examination.

The distension of the hypogastrium, the meteorism, and the extreme tenderness present, as symptoms of hæmatocele, were wanting, as was the sensation of doughy semi-elasticity conveyed to the touch always, and in all parts, by accumulations of blood in the soft tissues, and in such of the cavities as can be reached in manual examinations.

We remembered, however, that the pain produced by the mechanical pressure of an hæmatocele, the displacement of the uterus, and the interference with the functions of the bladder and of the rectum, are very nearly identical with the pain, displacements, and interruption of functions caused by extra uterine pregnancy. The pain from the latter cause differs, in that it is more decidedly paroxysmal in

character, and is furthermore so intense as to be almost pathognomonic. Finally, if the case was one of hæmatocele, suppuration, with its usual phenomena, must have occurred before the end of ten weeks and longer. Thus the diagnosis was made quite complete by exclusion.

We judged it to be tubo-abdominal, from the fact that we thought we could detect contraction in the tumor (or its walls) when the finger or a sound was introduced into the cavity of the womb, and caused contraction of that organ. There was decided contraction afterward, when the electric current was applied. Such contraction, we thought, could not occur without the existence of muscular fiber in a portion at least of the walls of the sac, and muscular fiber in that situation must be derived from the uterus or its appendages.

During the intervening time up to the 18th of March, the uterine flow, which had the character of the lochia, continued after the passage of the decidua; on the 18th of March it ceased.

The prospect was gloomy. At least the patient had months, and perhaps years of suffering before her, with the chance of death at any time from one of the numerous accidents incident to her condition.

So far nothing beyond palliation of pain and measures for the relief of constipation had been done in the way of treatment, but our evident duty to the poor patient demanded some more consistent and effective steps, which, of several modes or plans recommended, was likely to avert the serious dangers pending and increasing each day.

The immediate danger was from rupture of the cyst, and consequent hemorrhage or inflammation, one or both. The liability to rupture of the cyst would increase to the fifth month of pregnancy, when its occurrence would be most probable, and our duty was to remove or destroy the ovum

as speedily as possible in some way, so as to obviate further risk.

The method recommended in all the standard works on obstetrics, including Leishman, and also by several gentlemen, including Romsbothom, Hutchinson, Campbell, and others, who have written monographs on the subject, namely, to palliate and wait developments, and be ready to act when emergency required, we did not entertain, as such a mode promised, no relief from suffering, nor did it in the least lessen the danger. It would be simply carrying out what had already been done.

We also discarded the method proposed by Mr. Jessop, an advance on the older plan followed by the authorities just quoted, consisting in waiting until the fifth or sixth month of pregnancy or longer, according to circumstances, and then by the operation of gastrotomy, or, as some preferably call the operation, laparotomy, removing the fœtus, with its attachments, excepting the placenta, which Mr. Jessop advises to be left in situ to decompose, and be discharged through the wound.

We thought this scarcely less dangerous and objectionable than the older methods, though Mr. Jessop reports nearly fifty per cent. of recoveries (fifteen of thirty-one cases, in some of which both mother and child survived.)

A third method, removal by incision through the vagina into Douglas's cul de sac, proposed originally, according to Parry, by Dr. Charles Kelley, in 1750, and afterward by Bonnie, Dewees, and others, particularly by Cazeaux and Tanner, who recommend this operation in preference to gastrotomy. Campbell, in mentioning and commending the operation, states that in nine cases three mothers and three children were saved, but that "of the nine cases five mothers and four children perished." Parry has collected fifteen cases altogether, in which this operation has been performed.

"In these, nine mothers died and six lived, a mortality of sixty per cent. Of the children only two were saved."

Ten of these operations were primary, and the remainder secondary. All except one, by Thomas in 1875, were performed in the later months of pregnancy, or at full term.

One of the most remarkable, is that of Dr. King, who lived at Edisto Island, South Carolina, and performed the operation unaided upon a patient at full term, and after labor had commenced saving both mother and child. This operation was performed in 1801 or 1802, and was fully described by Dr. King, who, in a pamphlet, published a full account of it.

Thomas's operation, performed in 1875, was done in the third month of pregnancy, and was entirely successful. It differs from others of the same nature, in the use of the galvano-cautery knife, instead of a simple surgical incision, thus avoiding much hemorrhage. In a pamphlet descriptive of the case he recommends the operation at the earliest period after the diagnosis has been established, as probably safer than the plan of waiting until later. One can not but admire the boldness of this gentleman, and the frankness with which he makes his recommendation; but we remember he has one case only with its results as a basis for his opinion.

The method has the merit of affording a speedy termination of a case, but in view of the statistics and the character of the necessary procedures, it was somewhat appalling, and did not strike us as possible, although our case presented in the main the same features which decided Thomas to select the posterior wall of the vagina as the point for operation, namely, the situation of the tumor, vaginal fluctuation, together with the other symptoms already described, indicative of the pregnant state.

We therefore adopted the only remaining plan, namely, the destruction of the life of the foetus by the influence of

electricity as proposed originally by Bachetti of Pisa in 1857, and afterwards Cazeaux, and practiced by Mr. Hicks in London in 1866, and Dr. Allen in Philadelphia in 1872. Bachetti used electro-puncture and succeeded. Hicks used a common electro galvanic battery, placing one electrode in the vagina and the other on the abdomen over the tumor. "The foetal movements failed during the application of the current, but returned afterwards."

Dr Allen has been successful in two cases. He used "an ordinary electro-magnetic machine, applying one pole to the tumor in the vagina through a glass speculum, while the other was applied to the abdominal parietes over the foetal cyst."

This method of treatment had the advantage of little danger, as compared with those which we had considered, and the merit of having been successfully used without risk to the mother. The only danger was the possible rupture of the cyst, through the influence of the shock, but we estimated this as comparatively trifling. The harmlessness of the method, coupled with the fact that its use did not preclude the use of other means in case of failure, commended it to us, and we proceeded without delay to put it into operation.

We thought of the application of a single powerful shock by the discharge of a Leyden jar, as recommended by Duchenne, as most likely to cause the immediate death of the foetus, but we feared that such a shock might, at the same time, cause the rupture of the cyst. We next thought of the application of the constant current as the most powerful in chemical influence, but we remembered that as it would probably be necessary to continue the application of the electrodes for a considerable length of time. Cauterization, or at least an unpleasant degree of irritation would probably, result, so we decided to use the interrupted current of moderate strength, and to continue its application at intervals

until some impression was produced. The available instrument was an ordinary Drescher battery. The current was applied in moderate strength and continued fifty-five minutes.

The patient complained bitterly of its effects. In addition to the ordinary unpleasant sensations, she thought it increased the pain in her back. It caused evident weakness of the heart, as shown in the pulse, and increased paleness of the surface, with sensations of faintness.

We thought the current caused contraction of the uterus, and simultaneously, or nearly so, contraction of the tumor. If there was contraction of the tumor (of which there is little doubt), the opinion that the pregnancy was tubo abdominal received support from the effect of the electricity.

We followed the mode of application used by Dr. Allen, namely, the application of our electrode (properly insulated) to the tumor in the vagina, and the other to the parietes of the abdomen. The result was all that could be desired. The battery was first applied on March 20th for fifteen minutes. One-fourth inch of the coil was uncovered, gradually increased to three-fourths inches. On the 23d, the battery was turned on to one and a half inches for twenty seconds just before its withdrawal. The pain was intense, but after this date no pain or contraction of the cyst occurred.

On March 25th, the bowels moved spontaneously for the first time since February 23d, and she walked down stairs to dinner with a little assistance.

Eight applications of the battery were made in all. The last on March 30th, was with one-half of the coil uncovered for forty-five minutes, causing considerable back-ache during the last fifteen minutes.

On April 16th, the menses reappeared, and continued until April 21st. On the 22d, a sound was passed into the uterus for four and a half inches. The fundus of the womb can be felt just above the pubes. Thus another element in the diagnosis was added, viz.: the increase in size of the

empty womb, *pari passu* with the growth of the cyst. Very little change was observable in the tumor; fluctuation was still distinct; menstruation proceeded regularly after this—occurred on May 12–14, and on June 5. By July the womb had completely regained its normal size, and the tumor is not to be traced from the abdomen, though still distinctly felt from the vagina, being apparently as large as an average fist.

This is, then, the third successful case in which the electro-magnetic current has been used; and the only other case, recorded by Hicks, should really be excluded, since it was tried only twice and then relinquished. It is the least dangerous of all the methods, and does not preclude their subsequent employment. It is but fair to add that the constant hypodermic use of morphia for over a month may have had some influence in lowering the vitality of the fœtus and rendering the use of the battery more efficacious. The morphia habit was temporarily excited, but the patient was gradually weaned from its employment by about two weeks of “tapering.”

ART. III.—On *Retropharyngeal Abscesses*. By Dr. JOHN C. PETERS, of New York, President of the Medical Society of the County of New York, etc.

Collections of pus on the posterior and lateral walls of the pharynx are not very common, but we have seen several cases. They generally appear as flattish, round, or oval swellings on the posterior walls of the pharynx, and vary much in size. They are more frequent in children than adults, but sometimes occur during infancy, and their principal seat is in the loose areolar tissue between the posterior surface of the pharynx and the muscles on the anterior portion of the spinal column. They sometimes occur as an acute phlegmonous inflammation of the sub-mucous tissue of the pharynx, in consequence of an extension of suppura-

tive inflammation of the tonsils, and more rarely from acute parenchymatous inflammation of the sub-mucous tissue of the soft palate, which has extended downwards. They may arise from erysipelatous cellulitis; or from disease of the cervical vertebræ, which has extended forwards; or from degeneration of the post pharyngeal glands; from pyæmic infection; or as the result of injury to the walls of the pharynx by fish-bones and other foreign bodies; or, finally, from diphtheritic or syphilitic pharyngitis.

The posterior wall of the pharynx is in relation with the cervical vertebræ, being separated from them by the recti antici, major and minor, and the longi colli muscles. Between them and the muscular coat of the pharynx, which is formed by the constrictor muscles, is a quantity of loose cellular tissue, in which the so-called retro-pharyngeal abscesses form. These abscesses push the pharynx forward against the posterior nares, if high up; and, if seated lower down, by pressing upon the larynx, they interfere with respiration and speech. Occasionally, as Bellamy says, they point at the side of the neck, in front of the sternocleido mastoid muscles. Again, the deep cervical fascia has an attachment to the tubercles of the transverse processes of the cervical vertebræ, and incloses the scaleni muscles, forming the prevertebral aponeurosis, and the lax cellular tissue lying between this and the pharyngeal muscles is the seat of many retropharyngeal abscesses, which may then point either into the pharynx, or, guided by the fascia, may travel down behind the carotid vessels; and, in cases of abscesses seated behind the deep cervical fascia, one must always be on the lookout for the gravitation of pus downwards towards the thoracic cavity.

The pharynx extends from the base of the skull down to a level with the fifth cervical vertebræ, which is on a level with the lower edge of the cricoid cartilage, where, becoming narrower, it merges into the œsophagus. Some small lym-

phatic glands lie behind the pharynx, and the pharyngeal glands proper are racemose and follicular, the latter having the peculiar construction and composition of those of the tonsils.

As regards the ages of the patients, in Mondiere's eighteen cases, seven were between eleven weeks and four and a half years old, and ten out of Duparcque's thirty cases were less than four and a half years of age; while in sixty-seven other cases five were under six months old; eight were between six and twelve months; three between one and two years; two between two and three years; five between three and five years; one between five and ten years; two between ten and fifteen years; and forty-one above fifteen years of age.

There is quite a contradiction of opinion and statement between the German, English, and American authorities as to the origin of the disease; the former claiming that it is rarely idiopathic, while the latter assert that it most frequently is of spontaneous origin. Niemeyer says it is usually caused by caries of the spine, or by inflammation and supuration of the lymphatic glands behind the pharynx; or else it occurs as a secondary affection in the latter stages of typhus or scarlet fever, measles, septicæmia, and other infectious diseases; while it only occasionally appears as an idiopathic inflammation. Steiner asserts that they are generally due to caries of the cervical vertebræ, or to pyæmic infection; but West, on the other hand, says there are but few instances on record where the formation of these abscesses was the result of direct injury, and of their occurrence in connection with disease of the cervical vertebræ; and, leaving these exceptional cases out of consideration, they present themselves either as sequelæ of fever or as an idiopathic disease—the latter much more frequently than the former.

Dr. C. M. Allin, of New York, in 1851, gave the best account of this disease which had then been published, and tabulated fifty-eight cases from all sources, four of which had

been observed by himself; thirteen of them happened in infants under one year old; six more were under five years of age; seven were youths, or under fifteen years; and twenty-four were adults from twenty to sixty-one years of age. Or, as he sums up himself, twenty-eight were males, thirteen females, and seventeen, sex not stated; twenty were under ten years of age; four from ten to twenty years; five from twenty to thirty; five from thirty to forty years; four from forty to fifty; and three from fifty to seventy years old, and in seventeen the age was not mentioned.

The exciting causes were found to be exposure to cold in ten cases; lodgment of bones in the pharynx in eight; caries of cervical vertebræ in six; scrofula in five; syphilis in four; injuries to the pharynx in two; while the cause was or could not be assigned in twenty-two cases.

Of these, thirty-three cases were acute; seventeen chronic; and in eight no note was made. The abscesses were opened through the mouth in twenty-one cases; through the side of the neck in three; through the neck anteriorly in two; accidentally in three; spontaneously in four; not opened in twenty-three; while laryngotomy and tracheotomy were performed in five cases for supposed disease of the larynx.

Death occurred in thirty cases; in eighteen from asphyxia, and three from asthenia. Entirely recovered, twenty-five; with some stiffness of the neck in two; while the cause of death was not mentioned in five.

The simplest form of the disease arises from pure inflammation of the cellular tissue behind the pharynx, induced by taking cold, or the ordinary causes of unmixed inflammation. It is probable that the rectus capitis anticus muscles will be involved if the disease is seated high up; and the longus colli, if it is lower down, as well as the constrictor muscles of the pharynx. The symptoms will be a remarkable stiffness of the neck as well as pain and difficulty in swallowing, without any visible redness or swelling of the

throat at first, and the disease may be mistaken for rheumatism of the muscles of the throat, without any involvement of the mucous membrane. The best treatment of the latter or rheumatic disease is by the alkalies, aided with aconite and colchicum. The management of cellulitis, or phlegmonous inflammation of the connective tissue, is much more difficult, as there is a great tendency to the rapid formation of pus, owing to the large number of lymphoid corpuscles or young round cells which are poured out from the blood into the inflamed cellular tissue, where they aggregate into groups, especially around the connective-tissue corpuscles, causing destruction of the fat, which is usually plentiful in the cellular tissue, and purulent destruction of the tissue itself. These are processes which can rarely be stopped short of suppuration, but besides the usual antiphlogistic remedies, and the early resort to quinine and the mineral acids, the bromides have been recommended by some; and Ringer is especially urgent for the use of the sulphides. He says many abscesses, especially (!) in a *very* early (!!) stage of development, dry up and disperse, while boils and abscesses may be resolved by the sulphides; and even when matter has formed, they seem to check the surrounding inflammations and limit their area. This beneficent influence, he continues, may be abundantly proved by any one who will give the sulphides a trial. But Ringer is very sanguine, and not always reliable. I prefer 10 to 20 grain doses of muriate of ammonia. If the abscess increase much in size it may extend upwards towards the base of the skull, and downwards and outwards in various directions, when the signs of pressure on various organs will be added to the other symptoms. Thus, in Dr. Allin's seventh case, the abscess extended from the second to the seventh cervical vertebra; in the eighth, from the left side of the vertebræ to the right mastoid process; in the eighteenth, down into the thorax; in the nineteenth it was pressing on the cavity of

the larynx; in the twenty-first it extended from the cranium to near the thorax, and was pressing upon the larynx and trachea; in the twenty-seventh it burrowed behind the sterno-cleido mastoid muscle; in the twenty-eighth it was found immediately behind the glottis; in the thirtieth it had pushed down into the posterior mediastinum, and had burst by numerous openings into the œsophagus; in the thirty-fourth it had traveled down through the posterior mediastinum to the diaphragm; in the forty-first case a cul-de-sac of the abscess entirely filled the opening of the glottis; in the forty-second it extended from the second to the fifth cervical vertebra; in the forty-third, nearly down to the thorax, and along the right sterno-cleido mastoid muscle up to the mastoid process; in the forty-sixth, from the basilar process of the skull down to near the larynx; in the forty-eighth, from near the palate down behind the larynx; while in the fifty-first case it pressed upon the glottis and epiglottis; and in the fifty-fifth it extended down to the œsophagus.

Some of these severe cases were caused by simple exposure to cold, with or without any complication with erysipelas; others were induced by swallowing pieces of bone, which perforated the walls of the pharynx; and some were provoked by caries of the vertebræ and syphilis.

Steiner gives the initial symptoms as consisting of stiffness and pain in the neck and difficulty of swallowing, increasing in severity, followed by obstruction to the breathing, attended by a paroxysmal cough, or a dulled, nasal tone of voice, and immobility of the lower jaw. Finally, swallowing and speech become impossible, and the breathing almost so. On examination, a tense, round, elastic swelling will then be found in the pharynx.

Niemeyer wrongly attributes the peculiar stiffness of the neck to vertebral disease; and says, "In infants the restlessness of the child, its refusal to take the breast, its anxiety when compelled to drink, the attacks of coughing and chok-

ing, which interrupt the efforts at drinking, are apt to be referred to some primary affection of the larynx, like croup or laryngismus. This is particularly prone to be the case when there is also continued dyspnœa, and the child is hoarse or voiceless, while the cough has a croupy sound, which latter does not often happen. With these symptoms, it would be unpardonable not to examine the pharynx carefully, when the finger will usually encounter a tense, elastic tumor close behind the soft palate."

West places most stress upon the difficulty of swallowing, soon followed by that of breathing, accompanied with a peculiar sound in respiration, though not with the stridor of croupy breathing, nor the loud clangour of croupy cough. These symptoms are peculiarly aggravated by the recumbent posture, any attempt to assume which is followed by immediate threatening of suffocation. He also refers to the remarkable stiffness of the neck, and immobility of the head, which are present in many instances; and to the occasional occurrence of a distinct swelling of the lateral parts of the neck, that is more frequently apparent on one side than the other, without any attendant enlargement of the glands. In one case which West overlooked during life, because the swelling of the neck was not so tense as to lead him to think that pus was anywhere near the surface, a large quantity of thick, yellow pus poured out as soon as the superficial cervical fascia of the right side was divided in the post-mortem examination. He says, If the finger be carried over the root of the tongue and down toward the pharynx, a firm, somewhat elastic swelling will often be detected closing, more or less, completely the canal of the pharynx and projecting over the glottis so as to interfere with the access of air to the lungs. Sometimes the swelling is higher up and presses forward the veil of the palate; but sometimes it is so low down that it can not be brought into view, or the mouth can not be opened sufficiently to allow the back of the

throat to be seen, and the tumor can then only be detected by the finger. The difficulty and pain in opening the mouth are caused by excessive tension of the bucco-pharyngeal fascia. West also alludes to the fact that the dysphagia, which is usually so pathognomonic, has been slight in a few cases, and altogether absent in two; while occasionally no tumor can be discovered on inspection of the throat, nor reached by the finger. But these are extremely unusual occurrences. Of course the early symptoms vary according to the cause, seat, and direction which the disease takes. Brain symptoms may also mask them, and the true import of the dysphagia and difficult breathing are thus sometimes overlooked.

Dr. Allin places stress upon the presence of stiffness of the neck, followed by pain and soreness of the throat, and a peculiar feeling of continuous chilliness, as peculiar to the early stages of the disease, and to the frequent occurrence of oedematous swelling of the anterior and lateral portions of the neck. Sometimes this tumefaction is very extensive, and is supposed to arise from cervical cellulitis.

As the disease advances the pain and soreness of the throat are increased, and in older patients a peculiar feeling of fullness about the fauces, as if a lump or foreign body was arrested at the base of the tongue, is experienced, together with great difficulty in swallowing. In the course of a few days or more the respiration commences to be noisy, labored, and irregular. Sometimes there is only a slight snuffle, at others it is a hissing, stertorous, or roaring noise, or accompanied with a gurgling sound, from the passage of air through the viscid mucus which collects about the fauces. The voice is very much changed, becoming markedly nasal and resembling that arising from cleft palate. If the disease is not now recognized, and the abscess promptly opened, all the symptoms are rapidly aggravated. The dysphagia becomes very severe, food and fluids are ejected from the mouth or

through the nostrils; the labor of the breathing is greatly increased and interrupted by frequent convulsive paroxysms of dyspnœa or suffocating cough. These attacks are apt to be induced or rendered more severe by attempts to swallow, or by assuming the recumbent posture, in consequence of which the patient is obliged to remain sitting up. During the attacks of oppressed respiration the face is flushed or dusky, the head is forcibly thrown back between the shoulders, the lips livid and cold, the tongue protruded, and the pulse exceedingly rapid. It is in this stage that the disease is most frequently mistaken for croup, laryngitis, or œdema glottidis, but the peculiar crowing cough of croup is never heard, while the dyspnœa increases gradually in severity, and is always preceded by difficulty of swallowing, which is seldom urgent in croup. The increase of dyspnœa by pressure on the larynx and on lying down, is also very much greater in retro-pharyngeal abscess, and the peculiar nasal or guttural speech is very different from that of croup. Still, in old times tracheotomy was frequently performed, and the abscess entirely overlooked during life. It has also been mistaken for œdema of the glottis, but in that disorder the dyspnœa is most urgent during inspiration, while the difficulty of breathing in pharyngeal abscess is more continuous. Œdema of the glottis is marked by a soft swelling felt just at the base of the tongue, while the swelling of abscess is hard and elastic, is situated behind the larynx, and extends in nearly every instance above the level of the glottis, while the veil of the palate is generally spread over the tumefaction of the pharynx. When the termination of this abscess is fatal, it is almost always from asphyxia, by compression on the larynx. Before this happens the pus may even separate the alæ of the thyroid cartilage of the larynx, which separation may sometimes be detected by external examination.

The most rapid formation of retro-pharyngeal abscesses is

caused by septic cellulitis. Mondieu, Piron, and Allin have met with cases arising from the retrocession of erysipelas. One of West's cases occurred after scarlet fever, and the abscess passed up behind the pharynx quite to the base of the skull, and down behind the œsophagus to within little more than one inch of the clavicle.

Dr. Fleming, in 1840, asserted his belief that a very frequent source of these abscesses was an acute inflammation of the small lymphatic glands behind the pharynx. These glands are often absent, or incompletely developed. Dr. Fleming thought that these facts would account for the rare occurrence of this particular form of disease. Dr. Allin's ninth case had suffered from enlargement of the cervical glands, and his twenty-second, twenty-fourth, forty-first, and fifty-fifth cases were supposed to be scrofulous. It is barely possible that some external indication of glandular disease may be detected; but sometimes when these abscesses have pointed at the angle of the jaw they have been mistaken for indurated glands; also in the parotid region. In the forty-seventh case the glands of the neck became much enlarged at a later period.

Eight of Dr. Allin's cases were caused by injury to the pharynx by swallowing fish and other bones, and in some of these the anterior surfaces of the vertebræ and intervertebral cartilages were also injured.

Caries of the cervical vertebræ was the starting point of the disease in about one-tenth of all the cases. It is well to note that in the so-called disease of the vertebræ the mischief, wherever seated, almost always commenced first in the intervertebral substances, and the bones became secondarily affected. According to Dr. John Foster, when the region of the cervical vertebræ is first involved, there is a peculiar stiffness and uneasiness about the whole region of the neck, and an indisposition to turn the head to either side. The muscles seem on the alert to restrain any motion. There are

also obscure pains about the neck, extending over the occiput if the upper vertebræ are affected, or downwards over the shoulders and arms when the lower vertebræ are involved. The latter is the least frequent form of the disease. Thickening and tenderness are sometimes found, generally high up over the third or fourth cervical vertebræ. There may also be some fullness about the junction of the neck with the occipital bone, which is very characteristic when found, and is due to œdematous effusion in and hypertrophy of the cellular tissue around the deep-seated muscles. At this stage the affection has been mistaken for simple torticollis, as it was in the Solon case (Allin's 16th). But in wry neck the head is more drawn to the side, and there is an absence of tenderness over the spine. In diseased vertebræ, if the child is lying down and wishes to rise, it invariably puts its hands to its head to lift it up, while the surgeon will find, if he places his hand on the top of the child's head, that he cannot rotate it ever so slightly without causing severe pain. As the disease of the spine progresses, paralysis is apt to occur. An abscess forms in some part of the neck, just as psoas abscess is caused lower down, and generally points in the pharynx, or in the side of the neck between the scaleni muscles, or above the clavicle, or into the axilla or mediastinum. In cases of this kind the cavity of the abscess is apt to follow a more extended route than is usual in the acute form, except when this arises from septic cellulitis. In diseases of the vertebræ and their cartilages, the pus must first penetrate the anterior vertebral ligament, which is a strong band extending the entire length of the vertebral column from the basilar process of the occipital bone to the end of the coccyx, for the matter does not often burrow down behind it very far. This has led to the belief that in some cases the disorder is caused by injury to this ligament by sudden wrenches or strains, or by lifting a child up by its head, and that the pus makes its exit at the strained or

lacerated or otherwise weakened portion. About five per cent. of the cases arise from syphilis, and here the iodide of potash and mercury are the best remedies, but it is very probable that they will be found useful in a much larger class of cases, for Dr. Edward Stanley speaks in the highest terms of the benefits of mercury in osteitis and periostitis, even when attended with paralysis. Sir Benjamin Brodie and Drs. Latham, Burrows, and Markoe testify to the same effect. Nothing is further from the truth than that caries is always a scrofulous affection, while mercury is no more contraindicated in it than in any other inflammatory or asthenic disease. It is said to be particularly appropriate in sclerosis of bone, or connective tissue. Stanley sometimes preferred corrosive sublimate in tincture of bark, but I prefer the muriate of ammonia.

Phosphate of lime is recommended in caries and some wasting diseases as a most valuable and necessary food, being probably as essential to proper growth and nutrition as iron, and the nitrogenous and fatty foods. It gives solidity to the skeleton, and if the supply of it is too small the bones lose their hardness and easily become diseased. A certain quantity of the phosphate is required to supply the first basis for new tissues. In the normal state it is present in the intercellular fluid in greater quantity than in the body itself; and wherever cell growth is active it should be in excess. It is required in defective nutrition and deficient cell-growth, and in chronic, wasting diseases, large abscesses, scrofulous sores and caries of the bones, especially when combined with the pyro-phosphate of iron.

Stille also recommends lime in caries. Iodine was strongly recommended by Lugol, on the mistaken supposition that caries was a scrofulous affection.

Iodide of potash is regarded as almost specific in periostitis, and often acts like a charm. In seventeen cases of syphilitic caries and necrosis, six were cured, four relieved, and seven

received no benefit; the latter probably because the doses were too small, as the doses were only eight grains three times a day.

Cod liver oil proves eminently successful in caries of scrofulous subjects. Bennett cured one case with eight fistulous passages, leading to diseased bone, accompanied by fetid and profuse discharges, and an advanced state of hectic. Balman says it exerts a most beneficial influence. The combination of cod liver oil with phosphate of lime is probably the most useful. Taufflieb used it successfully in an immense lumbar abscess, attended with paralysis of the legs. The recovery was perfect. H. C. Wood says cod liver oil is especially useful in conditions of the system, marked by a general, lowered tone, a tendency to cellular hyperplasia, and the formation of exudations composed of imperfectly developed cells. If these undergo slow degeneration, with dessication, cheesy deposits are formed; while if a rapid, fatty degeneration, with abundance of moisture, pus and abscesses are produced, and ulceration is the final result. It is in these states that cod liver oil is so extremely useful, especially in the early stages when marked by weakness, a tendency to emaciation, with more or less anæmia; and its effects are equally well marked in the ulcerative and suppurative stage. There are various diseases of the bones dependent upon this state, either proceeding from disease of the cartilages and articulating surfaces, or from the spongy tissues, followed by caries and subsequent abscesses, in which cod liver oil is almost a specific; also in the cachexia of tertiary syphilis. Equal parts of glycerine and a few drops of bitter oil of almonds lessens the disagreeable taste.

Phosphoric acid, glacial, 3ij to iv., dissolved in ten ounces of water, in tablespoonful doses every three hours, has abated the fever and hectic of caries, and effected cures. Frank reports several cases.

Assafoetida in drachm doses once a day, for weeks and months, once had quite a reputation.

Fluoric acid and soluble silex have been recommended.

Mezereum is more useful in chronic periostitis than is generally supposed.

Belladonna, by its drying qualities, is practically useful in arresting suppurative inflammation; and sarsaparilla deserves attention in chronic cases.

ART. IV.—*On the Use of Electricity in Follicular Pharyngitis.* By P. FRANK BEVERLY, M.D., Westerville, Ohio.

[Read before the Central Ohio Medical Association.]

We desire to call the attention of the profession to a disease, perhaps, the most common in this locality of any departure from normality to which our attention as medical men is called, and our skill challenged, namely, Follicular Disease of the Throat and Air Passages.

I venture to assert that four-fifths of all cases of throat trouble which may come under our care present, in a more or less marked degree, granulations on the pharynx, velum, pillars of the fauces, tonsils, or upon all of these parts. Sometimes these small glistening bodies are no larger than the head of a pin, covered over with thick viscid mucus, somewhat grayish in coloration, or of a whitish tinge, like that which comes from the bronchial tubes at the commencement of an acute inflammation of the latter structures. We have seen these glistening bodies without concomitant trouble in the naso-pharyngeal space, or in the mucus lining of the inferior portion of the pharynx, or the larynx itself. Frequently, however, these granulations appear to be but the continuation of a similar condition which exists above the soft palate. They are then very much more enlarged and of different shapes—rounded, oval, oblong, in a vertical direction. These granulations accompany all sorts of diath-

eses, syphilitic, scrofulous, tuberculous, and in men and women of all trades, occupations, and professions. The affection occasions but little inconvenience in some persons, being found when the patient makes no complaint of any trouble in the throat in some instances; in other cases it occasions considerable annoyance, a constant effort to clear up the throat by hawking and coughing; again, we have noticed these granulations in throats where there are very noticeable proofs of a heightened degree of sensibility, and where the voice was very hoarse and discordant, reduced to a whisper, or entirely lost. Now, how should we interpret these seemingly incongruous facts, and what is the real pathological signification belonging to them? Evidently it is not in the granular condition that we should look for the explanation of all the morbid phenomena which show themselves in follicular sore throat. There is something beyond, and more philosophical to be considered. This disease does not seem to be brought about by any occupation or profession, nor due to any particular accidental circumstance or combination of conditions, although of some degree of permanency. No doubt public speakers, who use the voice almost incessantly, in close rooms and in open air, in high and low temperature, miners and chemists, who inhale poisoned and deleterious vapors or organic particles of a hurtful or pernicious kind, may increase a morbid state already manifest, but much more essential to the primary production or development of follicular disease is the diathetic or constitutional tendency which is usually, if not always, present in such cases.

Furthermore, there would seem to be some relation existing between the granular condition of the throat, and the herpetic disposition so frequently manifesting itself by eruptions upon the integument, arising from indulgence in certain kinds of food, as shell-fish, cheese, salt meat, spices, etc., at least eczema, psoriasis, pityriasis, etc., may be aggravated

by partaking of dishes containing these ingredients to any extent. So the professions and occupations before mentioned, the use of tobacco or alcoholic stimulants, even in moderate quantities, exposure to damp and cold, and the inhalation of irritating substances, will notably accentuate and increase the outward manifestations of the diathesis, in which granulations of the pharynx are so prominent a feature. In well marked cases of the disease we frequently meet with difficulty of swallowing, and an intolerance of hot or acid food or drink; again, these sensations have shown themselves spontaneously, and without intercurrent disease of the crypta, and were not aggravated in any appreciable degree by the contact of different kinds of nourishment, or by the effort of deglutition.

Occasionally there is well-marked periodicity about the return of these follicles. These phenomena, which may change and transform themselves into all varieties of curious and unpleasant subjective feelings, to which the patients apply terms expressive of personal conceptions of their exact nature, are not alone encountered in individuals of a peculiarly nervous temperament. We have heard strong, robust men complain as well as others of more feeble constitution; and there seems to be an intimate relation between the condition of the pharyngeal mucous membrane, when chronically inflamed and thickened, and this local hyperæsthesia of the implicated parts. No doubt the painful condition of the nervous filaments which are distributed to the pharynx is to be found in connection with other evidences of great or general nervous derangement. We would not attempt to deny that in other throat affections there are complications of nerve trouble, for in certain forms of erythematous sore throat, and diphtheria, and erysipelas of the fauces, we have met with grave nerve complications, which would even seem to be the original lesion, in which the pharyngeal plexus of nerves were so paralyzed that deglutition was impossible,

and there was contraction of the muscles of the spine and extremities from reflex action of the pneumogastric nerve. But in follicular disease the neurotic element, or complication, is more manifest when taken in contrast with the more clearly defined inflammatory type of the other throat affections before mentioned. In some cases of the disease under consideration, of long standing, one side of the posterior pharynx may be seen to be tumid while the other side is contracted, and other cases are so thickened and hyperemic as to apparently shut off air and food; and in other cases the sub-mucous and muscular layers are both partially absorbed. Occasionally too, the mucous membrane is so much thinned that we are able to perceive the muscular striæ underneath it. These results do not appear to be altogether analogous to those which we encounter as a result of ordinary chronic inflammatory disease.

There appears to be a sort of special anatomical infiltration in the beginning, and afterwards an atrophic degeneration of tissue, which is closely allied with the existence of hypertrophied or otherwise morbidly affected glandular follicles; and whenever these glands become ulcerated, as they frequently do, we believe that this ulceration may be explained by the want of nerve force generated in those peripheral extremities where there exists a condition of interstitial neuritis, and owing to the consequent thickening so produced, compression is exercised to such a degree upon the nerve fibers that their function is more or less absolutely abolished. Not only is the pharyngeal plexus thus affected, but the nerve trunks which go to form it, and thus we are enabled to account for the hyperesthesia and paralysis which pass within the throat and larynx and manifest themselves in the ear or other remote organs.

As illustrative of the pathology advocated in this paper, a few cases may properly be cited. Mr. F. W., a student, of close application and sedentary habits, of bilio-nervous

temperament, had suffered from dyspepsia several years. When he came under my observation he had well-marked follicles in the pharynx, thickening of the Schneiderian membrane, partial aphonia, neuralgia seemingly of the auditory nerve, and a feeling of general prostration incompatible with the local lesion. The treatment was iron and quinine and phosphorus. Also—

- R. Sub. Nit. Bismuth, 3j.
Hydrastine, grs. x.
Glycerine.
Comp Tinct. Cinchonæ *aa*, 3iv.
M. A tablespoonful before meals.

Also electricity applied to back of neck, and tongue and throat, and directed nourishing diet and open air exercise. At the end of two weeks his convalescence was fully established; that is to say, Mr. W. was so far relieved of all before stated symptoms as to be able to resume his studies. Now this case proved to me that the aphonia and ear pain were the effects of the connection between the ear and the larynx through the auricular branch of the superior cervical ganglion of the vagus. This auricular sends off two minute branches to the meatus auditorius, as described by Arnold, and one to the membrani tympani, alluded to by Sappey. Dr. Robinson, of the Eye and Ear Hospital of New York, says, in connection with this subject: "All medical men are familiar with the cough produced by introducing an ear speculum, probe, or other foreign body into the external auditory canal." He says this physiological phenomenon is satisfactorily accounted for by reflex action of the vagus.

Miss M. C. presents a well marked catarrhal constitution; that is, all the symptoms in this individual manifest a peculiar tendency to exalted hyperemia of the mucous membranes, with a peculiarly cadaveric complexion, and very enfeebled constitution; has been under treatment off and on

all her life. I have been her adviser for eleven years, frequently examined her throat and often found it studded with granulations, and sometimes free from them, but pale, spongy, and thickened. For several years past she has been attacked in the month of February with complete aphonia, pain in the ear, dysphagia, pain in stomach, and bowels, and spine, and extreme prostration. After trying a large variety of drugs with unsatisfactory results in her case, I have for three years past invariably commenced at once, when called to see her, with electricity, applying it to the spine and over the pneumogastric nerve, and to the tongue, which invariably restores her voice; by this is meant that after using most topical applications previously, that are thought to be restorative, electricity has acted so much more efficiently that they are left off. Iron, quinine, and so forth, pretty much as in the former case, eventually, that is, after several weeks straightens her up. These two cases (though many more could be related), taken in connection with the arguments before produced, appear to us to be satisfactorily interpreted, if we may suppose that anæmia of nerve tissue on the one hand, congestion on the other, can produce in man accurately defined symptoms.

ART. V.—*The Curative Relation of Measles to Whooping-Cough, with some Observations on the Epidemics of Measles and Whooping-Cough in the City of Zanesville, Ohio, Spring and Summer, 1877.* By Z. C. McELROY, M.D., Zanesville, Ohio.

Reported at session of the Muskingum County Medical Society, held in the city of Zanesville, Ohio, June 14, 1877.]

Early in the spring cases of whooping-cough began to be noticed in the city, or, at least, cases of cough, not amenable to ordinary treatment, made their appearance late in the winter. True, the characteristic whoop, or spasm, was not at all a prominent feature of the cases.

Six weeks or two months ago fully one-half the children

in the public schools were coughing, many with the unmistakable whoop. Now, a child without cough is the exception, not the rule.

Very severe cases have been rare within the scope of my observation. A few cases would have two or three bad days and nights, then commence improving; this, aided by treatment, however. Several times I have noticed children stop on the sidewalk, go to the curb, have the spasmodic whoop, throw up a mouthful of mucus, and then pass on.

Two weeks since I noticed the first case of measles, super-added to whooping-cough, in the same individual; since then several more. The measles, or fever and eruption, diagnosed as measles; have been very mild, and running a very rapid course, in the main, without complications in children two years of age, to recovery. Some very young children show, speedily, pneumonia, or cerebral complications, or both, ending in death. But in the bulk of cases they pull through to recovery.

The remarkable feature of these duplex cases is, that with the subsidence of the apparent measles, the whooping-cough seems to come to an abrupt termination. The measles seems to have "swallowed up" the whooping-cough.

The children seem to resume health almost immediately, though there is to be remarked more or less pallor of surface and furred tongue, persisting after the cessation of the fever movement, and return of appetite.

I have had more satisfactory results in remedial management, with large doses of pow'd ipecac than with any other medicine. Three or four days with ipecac (three to ten grains each dose), and not oftener than morning and at bed time, daily, followed as many days by Dover's powder or Dover's powder and quinia, seems to substantially end the cough in some instances.

I have been using belladonna in some cases with apparent benefit; have given as much as five grains extract per twenty

four hours to children from four to eight years old, without much disturbance of pupils, but with a marked decrease of the spasmodic cough.

But the remedy, *par excellence*, according to my observation, has been the measles. Nor need this be considered strange. In a paper I read to this Society a dozen years ago, on "The Curative Relations of Vaccination to Pertussis," I called your attention to the fact that vaccination in children with whooping-cough, if successful, carried the whooping-cough through to termination at its own speed; that when the subjects of whooping-cough were successfully vaccinated, the whooping-cough and vaccination disappeared together. Measles has, so to speak, a definite speed, while whooping-cough can hardly be said to be a febrile state at all without complications; though cases of whooping-cough, with more or less fever, are by no means rare—in fact, rather common.

Since that time cases of chronic syphilis have been reported as cured, both by small-pox and erysipelas. So certain have I regarded vaccination as the remedy for whooping-cough, that I have rather held vaccination in reserve for many cases, to be performed when whooping-cough occurred. In the very case on which my report this evening is in part based, I had held out against vaccination until the small-pox flurry last fall, when I had to vaccinate, not in accordance with my judgment, but to satisfy a public pressure.

But it never occurred to me, at any time, that measles would prove, if anything, more effectual—though, if severe, with rather more hazard to life—than vaccination, though neither are, by any means, to be considered altogether safe, for deaths occur from all them, viz., whooping-cough, vaccination, and measles.

As therapeutists, we pit one remedy, so to speak, against another; or, perhaps it would be better to say, pit one drug or medicine against another designated as poisons. Thus, the antagonisms of opium and belladonna are well ascer-

tained facts in therapeutics; each is a reliable antidote to poisoning by the other.

The production in a living body of what we call disease is brought about in the same way as what we call the effects of medicines. The processes of waste and repair of structure, or the dynamic capacities of structure, must undergo modifications, as an essential condition, for the existence of what we call disease. In exactly the same way as antagonisms are said to exist between drugs and medicines, does antagonisms exist between so-called diseases; and it seems to me we may add, as the results of both observation and experience, that rubeola is an antidote to pertussis.

In the discussion that ensued, Dr. Nye said Dr. McElroy's idea of the antagonism between measles and whooping-cough was to him an entirely new thing—a surprise. He knows that vaccination is employed to shorten whooping-cough, but that measles shortened it too, was altogether new. He can not see where we are to get the measles when wanted, like vaccination. Many years ago, in his own family, he had several children with whooping-cough, for which he gave a syrup of garlic, and always thought that was what was doing the work, though he had vaccinated them, and he noticed that the whooping-cough ceased as the vaccination declined. At that time he never dreamed that it was the vaccination that did the work, but is now satisfied that it was.

Dr. Holden has but little to say; it is a new idea to him; has not found that measles benefited his whooping-cough patients; does not know why; some of them have recovered from the measles, but continue to bark away; does not believe in it, and thinks there is no treatment that will cut whooping-cough short—not even vaccination; has faith in a dilute solution of quinine; thinks the ipecac treatment of no account, and that simple whooping-cough needs no treatment.

Dr. Holston would not like to prescribe measles for whooping-cough; considers a case made worse by the measles; more danger of the lungs becoming affected; thinks that simple whooping-cough is not dangerous; believes vaccination will modify it, and that chloral and belladonna are the best remedies; ipecac, no matter in what sized doses, will not modify it.

Dr. Ball thinks the subject interesting at this time; measles do not modify whooping-cough when complicated with local inflammations; considers ipecac the best remedy in the early stages, followed by chloral at night; uncomplicated cases need little or no treatment, and, when complicated with pneumonia, are quite serious, and need active treatment; as regards vaccination, has had some experience this season, and found that it had a very decided effect; should give belladonna in full doses; has also used inhalations of slacking lime; thinks belladonna and chloral the best remedies.

Mrs. Johnson has had little experience, except among very young children, and no severe cases, and no complications. Had a case of whooping-cough, in which the little patient had intermittent fever; when the fever was interrupted the cough was gone. Does not consider it a test case, as the child had had whooping-cough six weeks when the fever occurred. Used external means, ointments, glycerine, gin, etc. Has had no success in abating it by belladonna.

Mrs. Peabody said her two children had whooping-cough several years ago in the winter. She treated them by porous plasters applied to the chest and spine. Wore them until spring, and they got well.

Dr. Lazelere said the difficulty has been in regard to the pathology of whooping-cough. He thinks all physicians treat it empirically. The pathology is through the pneumogastric nerve. In Mrs. Peabody's cases, the external treat-

ment operated through reflex action, and is, therefore, intelligible. He understands that the author of the paper takes the ground that measles is an antidote to whooping-cough. He is mistaken in regard to his observations; they won't bear the test of logic. It is an axiom in medicine that two diseases can not exist at the same time in the same individual. From his own observation he concludes that measles have not modified the whooping-cough in any case whatever. In his own family a child has had whooping-cough, now in the fourth day of measles, with no modification of the cough. Dr. McElroy has not been careful in his observations. He never vaccinated for whooping-cough. Don't think simple whooping-cough needs much therapeutics.

This subject was continued over to the July session, at which Dr. McElroy made the following report:

Dr. McElroy said that since the last session the whooping-cough had continued to prevail in the city, many new cases having appeared. And measles, too, had continued to spread. Since his report last month he had carefully observed the cases coming under his notice in regard to measles communicating its own speed to whooping-cough. Is still more thoroughly convinced of the correctness of his report last month. In only one respect has he had any occasion to change his conclusions, and that is in respect to the novelty of the fact that, so to speak, measles cures the whooping-cough.

No mention of such a fact can be found in the medical works he has examined, and it seemed to be a new thing to the members present. He had found, however, that it was not new among all the people. He has found many who knew that "measles cured whooping-cough." Some knew it from having seen it, but with more it was a tradition.

He had found several cases not bettered by measles. In them the measles eruption only lasted two or three days.

The eruption was scanty, and with but little elevation of temperature. They were what would be called mild cases, or, rather, imperfect or doubtful cases of measles, though presenting scanty and imperfect eruptions.

Nor does he doubt the experience of other members of the society, though contrary to his own. Was it a uniform sequence, it would have been noticed before, and found its way into the text-books. It seemed to him that in the cases of failure he had studied, that the whooping-cough was simply the stronger of the two perturbing influences, and therefore was apparently undisturbed by the measles in any respect.

But still the fact remains, that in by far the greater number of instances the measles communicated its own speed to whooping cough during the present epidemic in our city.

Dr. McElroy said that his confidence became so strong that he had prescribed the measles for whooping-cough in several instances, advising parents to send their children where it was prevailing, and in several instances designating where to send them; that in several instances his requests had been complied with, and ended to the satisfaction of both parties.

He also stated that it must not be forgotten that both epidemics prevailed in mild form; that the mortality had been among very young children, and mainly from complications of the brain and lungs. What he desired was simply to state the facts as they had occurred under his observation the present season.

He remembered reading in the American Journal of Medical Sciences (July, 1862, October, 1862,) a very interesting paper on the influence of wheat-straw fungi in the production of measles, or, a train of symptoms which could not be diagnosed from measles; and suggesting that as the probable source of "camp measles," then so-prevalent in the army, and often proving fatal, or permanently disabling soldiers so

as to lead to their discharge. The articles attracted but little attention at the time of their publication, and none since that he is aware of, though returned soldiers often told him that from about that time, viz., at the close of the first year of the war, they were not allowed to use straw to sleep on in their bunks or tents.

It seems to him that it may be possible by means of wet wheat-straw, or other means not now known, we may be able to command measles when wanted, just as we now command vaccination.

The pitting of one "disease" against another, as poison and antidote, was a "new departure" in practice, which may lead to very good results. Sufficient data have already been accumulated to warrant the inoculation of chronic syphilitic patients with small-pox virus.

When looked for, other and unexpected good results may flow from such remedial proceedings as prescribing measles, with high speed, temperature, to, so to speak, cure whooping-cough, with slow speed and indefinite duration; that is, communicating the speed and definite duration of measles to the slow moving and indefinite whooping-cough.

ART. VI.—*Appendix to an Article on the Introduction of Cholera, etc.* By JOHN C. PETERS, M.D. (See No. III., p. 206.)

The failure of Dr. Pettenkofer to unravel the so called mysteries of the disastrous, if not disgraceful, outbreak of cholera at Lanfer could easily have been predicted by any careful student of his former writings. If cholera breaks out in the sleeping-rooms on the third story of a prison, it is not absolutely necessary at once, and to the neglect of almost all other precautions, to investigate the depth of the subsoil water; nor to allow the diarrhoeal cases and their soiled bed and body clothing to remain in the wards until

actual, unmistakable cholera shows itself. It was also not necessary, much less seemly and prudent, to wash the night-pails and excrement-tubs of over four hundred convicts with water from, and quite near, the only well which supplied drinking water; nor to allow all these filthy washings to run down into a drain which flowed quite close to this well. In dormitories in which a portion only of the inmates were attacked it was quite important to note the location of the beds, whether near windows or privies, and whether their occupants were inhaling pure or foul air at night. Pettenkofer merely says: "I am sorry that I noted down, at the time, only the dormitories, and not also the position of the individual beds in each case, as it appears very desirable that this should be done in all future cases." We should think so. Still, we learn that in badly ventilated rooms, with only one window, from twenty to twenty-five per cent. were attacked, while in those with three or more windows only ten per cent. were affected; and in one set of men, the joiners, who worked and slept in badly situated and affected rooms, no less than fifty-six per cent. were attacked, while in those who worked in healthy, distant rooms by day, and slept in unfavorable rooms at night, about twenty-eight per cent. were attacked. The rope-makers worked in the open air by day and slept in a good room at night, and had only three cases of cholera and one death. The military squad, seventy in number, who had separate privies and slept in isolated barracks, escaped entirely. The guard, also, did not use of the water from the well in the hospital court-yard, the opportunities for pollution of which Pettenkofer says were many, as the cesspools near it were not water-tight, and there was also much cleaning and scrubbing, even of privy tubs, about it, and very much dirty water was poured into the sinks and drains close to it throughout the whole year. The prisoners took water from this well every evening, in wooden pails and pitchers, to their sleeping-rooms,

where they washed their faces and hands next morning. Their under-clothing was changed once a week, on Saturday evening, and this dirty linen was kept on chairs at the bedside all night, in order to be delivered up on Sunday morning. The sheets on the beds were changed once in four weeks, and the straw mattresses re-shifted three times a year. The blankets were cleaned once a year, and feathers from time to time. Yet Pettenkofer is astounded that cholera prevailed in these wards!

In contrast to Pettenkofer's confused account, we have a simple and clear account from another Bavarian prison, at Rebdorf, by a comparatively unknown but honest and clear-headed man, Dr. Lutz. On the 20th of November a prisoner arrived from Munich, where he had been in an infected prison for five days, during which time cholera had prevailed and deaths had occurred. This prisoner had slight diarrhœa in the Munich prison, which had been controlled with tinct. rhatany and opium and cinnamon; but it returned the day after his arrival at Rebdorf, when he was removed into the hospital ward, and from thence into an empty room. He died before rice water discharges occurred, and his urine was entirely suppressed. His bed and body linen were disinfected, and then his bed. But these precautions were taken too late; for in seven days a washer, a cleaner, and a hospital patient were attacked, and the two former died. The washer had washed the convict's clothes on arrival, before they were disinfected, and the cleaner cleaned the room into which he had been taken. There were three hundred and ninety-three prisoners in all; and, although the promptest measures were taken in the course of the next forty-eight days, thirty-four were attacked, and twelve died. Every case so-called gastro-intestinal catarrh and diarrhœa was at once taken in hand and removed to separate rooms, and the most thorough cleanliness and disinfection carried out. Of the five wells, two were used for drinking and cooking water, and carefully protected; two were devoted to washing purposes,

and for the cattle. As soon as a case of cholera occurred in the dormitory it was emptied and fumigated. The cases generally occurred in adjoining beds, and were surrounded by others with diarrhœa and intestinal catarrh. Finally, it was noticed that the blankets seemed to convey the infection, and they were more carefully cleansed, and not taken into use again. Diarrhœa wards were appointed, and that off from the other rooms and halls; as fast as cases of cholera disclosed themselves they were removed to separate cholera wards. All soiled clothing was put in zinc and chlorine water, then fumigated with sulphur, and finally washed by special washer. The chamber-pots and privy-pails had large quantities of sulphate of iron and carbolic acid put in them; were washed in special places, and the whole contents buried in distant, well-disinfected pits. When a cholera patient became convalescent he was removed into another clean room, which had previously been fumigated with manganese and sulphur. The bed and body clothes of the dead, and the bed pillow-cases and sacks were burned; the blankets were dried, fumigated, and not taken into use again for a long time. Dr. Lutz was able to track down all his cases to their sources. There was no mystery about them which a little industry and intelligence could not unravel; and the disease was stamped out with little loss.

ORIGINAL LECTURES.

ART. VII.—*Lectures on Insanity*. By DANIEL H. KITCHEN, M.D., Chief of Staff of the Hospitals on Blackwell's Island, New York. Delivered at Charity Hospital, during October and November, 1876.

LECTURE III.—MANIA.

[Continued from page 256.]

The starving intellectual centers for want of emotions caused by outward influences being properly received, and which is the basis of all trouble of the melancholic, become

ravenously hungry and thereby savagely mad. "Enough of this prison; I will take what is denied me, here, there, everywhere, no matter what, one thing, many things, all things, in order or out of order, singly or together, separately or mixed, or in isolated fragments." So says intelligence, so it acts accordingly, thinks accordingly, and does things accordingly. Man is now a maniac; his "I am" is set free, but like a long imprisoned animal is wild, his previous depression changes into excitement, his self-feeling into exaltation. There is no more controlling this exaltation of self-feeling; like a runaway horse, it dashes here and there with fury, until it breaks down shattered and a wreck, never to revive again unless a God-sent accident stops its career and makes it return home sound and sane. Such is mania. Is it possible, under the circumstances, to describe a typical case or to give all the symptoms of this form of insanity? Hardly so. We may say the patient sings, talks, dances, jumps, runs about, destroys, tears clothing, acts the clown of the pantomime, and does all and everything extravagantly foolish and with foolish extravagance, and still it is merely an approximate description of a maniac.

What has been said in the last lecture on the cause of the great variety of insane manifestations, is applicable to mania as well as melancholia. The character of the old predisposition to physical anomalies as existing in the subject before the outbreak of mental alienation now shows itself, and the old proverb, "children and fools speak the truth," is verified. The old diathesis to a specified crookedness of mind was, during health, under control of the will, now it is out of it.

We have two groups of mania, the one where the derangement is characterized by the movements, conduct, and thoughts, being of a general incoherent nature, without regard to objects, place, or circumstances, and termed usually *acute mania*; the other where the derangement partakes more

of a system, and the actions and thoughts are in response to *one* or only a *few*, but definite delusions. This is called monomania, and is usually *chronic*.

The state of melancholia which invariably precedes, more or less apparently, all cases of mania, appears to be in a kind of lull; the patient seems anxious or even fearful as of an approaching storm. Suddenly the emotional, or what Maudsley calls the affective life, ceases to be under control. What during the stage of melancholia induced the suppression of predisposing inordinate acts of previously healthy and rational man, is now fairly deserted, and a quite opposite mental and moral manifestation takes place. The morbid impulses lead him to the contrary of what he has been, and a state of delirium brings him to all inordinate actions previously controlled. A miserly man becomes extravagant, affection changes to indifference, mildness of temper to violence, and rationalism to bigotry. Patient is extremely lively, a busy-body, restless, and does everything beyond measure. Hence all moral or immoral acts are carried to extremes, and symptoms such as excessive sexual indulgence, swearing, extravagance or the reverse, great piety, belief of apostolic callings, etc., are not uncommon. Strong impulses, destructiveness, suicidal and homicidal propensities and others are now not only being thought of but executed, and provocations meet with opposition, violence, and blows; instinctive feelings of propriety are often lost, pleasure is found in the filthiest acts, such as besmearing themselves with their own fœces, eating dirt, acting with great indecency and lewdness, and the most refined minds become the most disgusting; the intellectual faculties are unsteady and wandering, the answers and speech incoherent and never remaining upon the subject, but rambling from one to another, and all kinds of ideas follow in rapid succession.

The facial expression differs according to the character of ideas and the extravagance of conjectures; often the expres-

sion changes rapidly from anger to benevolence and from resentment to gratitude. The whole external man shows what is going on within him, and as innumerable the delusions and thereby the acts and thoughts, as innumerable are also the facial expressions. As pretty constant symptoms we, however, find flushed features, congested eyes, discolored hair. To give you a slight idea of the inability of the patient to fix his mind upon or to adhere to one idea, may form part of the following letter of a patient, as given to Dr. Sankey:

"My Dear Sir and Mrs.: We have asked him and (to-day written for the Prince of Wales grant of 1862) which we never then refused, but as a bird in the hand is worth two in the bush, we on the 5th of November day capably carried a law case, and the judge's judgment was the money to be paid forthwith. Daily bread and common sense depended upon the recovery of £10 suit on hand—Ladies could not encounter a London crowd thro' whether the greater sum, 40£ or £ per annum was said to be available, having received no written order, how could you go through a thicket without a ticket, as upon all such occasions the police Pass. We knew before we came here the grant was said to be placed at the disposal of an English and Continental lawyer in a representative law case, of which Prince John of Saxony, under reported slander of my character, wished to be unconsciously the respectable head, of course we refused his kindly desire to aid, and judicially with it, which was groundless and childish. Retrospectively and prospectively looking at our present history, we say let friendship take place of representations and necessitations, as money is our friend in the king's coin."

I may here incidentally remark that letters from the insane are often of value to the superintendent of an asylum as a means of convincing relations of a patient of the state of his sanity. *These* generally tell the truth.

Other symptoms of mania are :

Pulse accelerated about fifteen beats per minute more than in health, often more yet, and very variable. When the state of excitement has continued for a while the pulse falls to almost a normal rapidity. The temperature of the body is slightly increased, and when connected with a typhoid state, is increased as much as three to five degrees.

Sleeplessness is almost always common, the patient being noisy during the night.

Digestive system more or less impaired, particularly when the patient eats all sorts of filth, etc., the tongue is usually red, with prominent papillæ, but sometimes coated and foul. Constipation is common, or if not, there is persistent diarrhœa.

Skin, either dry and harsh, or else what is more common, moist, and of offensive odor.

Breath is also offensive and sour.

Urine.—During excitement the flow of urine is diminished and deep in color, with sediments.

Sexual excitement is not present, and the menstrual discharges are often suppressed.

Appetite is rather excessive, a very few refuse food, but not for a long time.

Nutrition.—On account of the constant muscular efforts, as well as mental activity without adequate digestive powers, the patient grows gradually thinner, and, in some cases, marked emaciation takes place. Although this gradual loss of flesh need not occasion any alarm, we must watch for a sudden exhaustion and collapse of a maniac, particularly in the early stages. It may here be remarked, that when that exhaustion leads to a fatal termination, all mental symptoms generally disappear, and the patient dies conscious of what is going on around him.

Pupil.—A change in the size of the pupil has been ad-

vanced by some authors, but it is so uncertain that no value can be placed thereon.

The *course* of the disease is very variable. We meet with many cases where an attack of mania remits for a time, to resume again with its original force. Cases of complete intermission are also not rare. Often patients make regular yearly calls to the asylum, and usually are perfectly cured again after a short stay ; but, generally, the fourth to sixth relapse proves either fatal or lapses into a chronic state. Sometimes attacks of mania alternate with melancholia. Any one attack of mania can last from a few hours to several months. Recoveries take place usually during the year, seldom after that time and hardly ever after two years, when the disease passes over into chronic mania or dementia—that is to say : when the acute stage becomes chronic and, aside from extant delusions, considerable intelligence remains, the case becomes one of chronic mania, but when with the delusions remaining, there is also a loss of mental power to a considerable extent, then dementia follows. One particular kind of mania may here be yet alluded to—where the disease enters almost without visible melancholia, takes a very rapid course, with fever, delirium, and great prostration, ending, in two to six weeks, in death. Upon opening the skull, acute inflammation of the membranes, with effusions, are found.

Prognosis.—Not quite as large a percentage afflicted with mania get well, as with melancholia. Nevertheless many are the recoveries of acute mania. When of long duration, or when passing over to chronic mania, the chances are very much diminished. The mortality during the stage of acute mania is, however, less than during melancholia, being only about four per cent., to the others six or seven per cent.

Puerperal mania offers sufficient peculiarities by its cause and on account of its symptoms, as to merit a distinct consideration. It is a state of insanity arising from and follow-

ing parturition, and occurs during the period of *excitement* of the lacteal system. It is also peculiar on account of its occurring during a state of woman, when any complication of the normal progress of that state is most acutely felt and difficult to deal with.

It is rarer in lying-in hospitals than in private practice, probably because the poor and destitute have during and after parturition less care at their homes than at a hospital.

The danger of puerperal insanity to appear decreases with the time after parturition, so that more than two-thirds occur within a fortnight, and a large portion of them during the first five days. Again, more cases are noticed after the first pregnancy than subsequently.

We find very few instances where melancholia is the type of puerperal insanity, and if we do, it can generally be traced to previous attacks of that kind without a puerperal state, so that we have to speak here only of "mania" after pregnancy. Dementia can, of course, not be termed puerperal, being a sequela of mania too far distant from the original cause. Puerperal mania, then, offers us at first sight the following very characteristic group of symptoms: (1) Fever, (2) intense mental excitement, (3) excessive incoherence in what is said, and (4) a disposition to use obscene words during all the incoherent talk. Dr. Macdonald pronounces the last as very characteristic, on account of its constant occurrence and the gross manner in which the words are displayed, quite differently from what happens with women in other types of mania. The malady approaches in the following manner: The patient feels restless and uncomfortable, and cannot catch the little cat-naps so desirable in the lying-in state; she complains of headache, and the nurse reports a diminution or complete cessation of the lochia; the appearance of the woman is changed, and an anxious look in the countenance is noticed; the pulse is quickened, and what is called nervous or irritable; appetite is lost, and

upon examining the tongue, we find it coated and white ; epigastrium heavy ; urine scanty, and, when tested, albuminous ; the secretion of milk diminishes or entirely ceases. In some cases an inflammatory condition supervenes, and these generally terminate fatally.

The general mental excitement mentioned above develops into complete aversion to everything previously dear to her ; husband and child are disregarded and neglected, and cases are on record where attempts to kill the child have been made ; no matter how correct previous habit and decorum may have been, they are displaced by indecent language, oaths of fearful nature, and exclamations or mutterings which astonish all who knew her before ; she talks incessantly and angrily, gesticulating wildly, while the eye is unsteady and wandering ; hyperæsthesia and acuteness of senses, particularly hearing, accompany this wild state of things ; even suicidal desires have been observed ; occasionally the symptoms partake of the hysterical, the patient crying and laughing alternately, accompanied with convulsions.

Aside from mechanical injury or contusion to parts during parturition in tedious and instrumental labor, and which is sometimes the real cause of the calamity, it has been noticed that women susceptible to mental derangement find the parturient state a fruitful exciting cause. Other causes are strong mental excitement ; for instance, the remorse of having an illegitimate child, particularly when unmarried ; mental distress, or shock of any kind ; anxiety during prolonged labor, etc. If not combined with inflammations of internal parts, or marked phrenitis, the progress is very favorable. About eighty per cent. recover, and about five per cent. die. Some pass into a state of chronic insanity and dementia. The first sign of recovery is the return of the lochia, or milk, and, if later, of the menstrual flow.

Monomania, or, as it is sometimes called, delusional in-

sanity, or also chronic mania (a misnomer), occurs generally as a sequence of mania. Here the patient deals with some erroneous conviction on a definite subject, which has taken such a hold upon his reasoning faculties that every other consideration is either laid aside or drawn *into* the category of his subject, and judged accordingly, and, of course, erroneously; otherwise he *seems* not mentally deranged. Maudsley very correctly calls it a systematization of the morbid action in the supreme cerebral centres.

We must be guarded not to fall into the error of believing that the individual is of sound mind outside of his monomania. This is not so; it merely seems so. How can the intellectual faculty be normal when it does not recognize the impression made upon the affective or emotional centres, when it does not *appreciate* the error, and therefore acts, and thinks, and does wrong? The reasoning and intellectual faculties cannot be *affected in one direction only*; it is the *generally* affected state which allows a particular erroneous action.

Because the mental state of monomania is constantly under the influence of surrounding circumstances, either to act as a cause for an outbreak, or to give that outburst of mania a particular direction, color, and shade, it is best to keep the patient from such influence. It therefore arises that a monomaniac is not only much better off for his own feelings, but also for his own good, in a lunatic asylum, for there he has not ground enough to expand upon, nor cause enough to bear matters upon his misdirected conceptions. A patient brought to a hospital in that state is soon found to get apparently better, and friends and relatives visiting him often believe him cured, and ask, in spite of the physician's objections, for his release, when, scarcely among worldly influence, the morbid respectivity of the latter shows its true colors, and the patient waxes worse, even worse than before. Occasionally, the direction of ideas partakes, under the new

influence, of a new, or at least somewhat different character, and often the relapse is very violent.

We have observed that monomania is a sort of delusional insanity of the emotional centres and affective life. Now, it happens that the false impression is so engrossed upon that emotional nervous system that an outward cause is not always necessary to give it impulse; in other words, it becomes entirely *animal like or instinctive*, and is, I think, very properly called by Esquirol *instinctive monomania*; whereas, otherwise, some cause, however small, is necessary as an incentive to an outbreak, when we may call it *affective monomania*. In both of them the general character is about the same, the difference lying only in the existing causation, and in the continuity of susceptibility to bring about this morbid action.

Another peculiarity must be alluded to, to allow of a perfect understanding of a completely developed case of monomania. We come frequently across individuals whom we know have from their very birth a defect of the organic functions of the brain, varying in degree from slight imbecility to complete idiocy. Such individuals demonstrate their abnormal action by non-recognition of morality, according to their degree of alienation; and during their childhood lean, by fancy probably (for their immoral manifestation seems to give them intense satisfaction), towards offense of one or several of those moral laws which are impressed upon the crowning point of God's creation—man. Lying, fighting, stealing, contrariness, complete incorrigible villainy, irresistible pleasure to torture, even killing, without a spark of human kindness, respect, or feeling, are the principal characteristic propensities of such cases.

Now, as by the definition given to insanity, at the beginning of these lectures—a *change* of a person's mode of acting, thinking, and doing things—this very definition becomes a test of insanity, the state of things described in the previ-

ous paragraph cannot, under the circumstances, be such a test, and although its classification among the various phases of monomania is probably the clearest and best, it ought to be looked upon as a "congenital mental deformity."

Delusions (perversion of existing things) and illusions or hallucinations (imagination of non existing things), either one or the other, are the prototype of monomaniacal symptoms. The degree of a patient's previous state of mental education, conjoined with circumstances occurring in everyday life, be they social, religious, or political, give the first coloring to these delusions and hallucinations, out of which spring the perverted actions of the individual; sometimes in language and expression of ideas, or in deeds resulting from regularly constructed, but of course out of place, plans, or sometimes in continuous brooding over mechanical or scientific novelties and inventions which engross the patient's mind. This diseased psycho-cerebral condition does not usually appear at once, but comes on gradually, and is noticed by a show of reserve at first, in which the patient seems absorbed in some particular thought, and if disturbed in it, is considerably annoyed, which annoyance will often produce an outburst of the very acts and doings which express the character of his delusion. This mono-activity of the brain will very naturally at first seek to exclude everybody else from its sphere, and suspicions arise toward the nearest kin or those around the patient, and all acts from and by them are looked upon as having as an object his physical or mental destruction, or to embarrass him in the execution of some premeditated scheme. The least irritation will now sever him from any rational connection with the world around, the first outburst occurs, and the projected deed is committed. Outrageous as that may be, a reaction generally occurs in the first attacks, and the person seems for a while to ponder over the feasibility of his acts, even sometimes showing a kind of remorse; but the seed has been

sown, and every attack brings him further from control of himself, until the delusion becomes constant and steady, and the acts correspondingly frequent in their occurrence. Such is the initiation and progress of the majority of cases of monomania.

We meet, however, occasionally with cases which do not take such a wild and random stretch of the unnatural, and it is well to have an insight to that anomaly of perversion. It occurs prominently in individuals who in health are what is called possessed of indomitable self control, firmness of will and coolness under all circumstances. They feel the storm coming and fight against it, as the epileptic sometimes feels his "aura" and runs for help. Such persons by any overstrain of their mental faculties or shock to their supreme nerve centre, in short, when powers of endurance are put upon the stretch, suddenly find themselves no more competent for their usual mental functions, complain of dull headaches, (one said as if the brain was compressed from all sides), sleeplessness, loss of appetite, often expressing themselves as, I feel changed, I am not like myself, and the like. And so they are. Were it not for some control which they were in the habit of exercising over themselves, they would now give up to strange impulses arising unconsciously. Tendencies to do this and that which their self-possession overcomes, for a while haunt them. Poison is bought for suicide, and afterwards thrown away with disgust; sorties from home are made for some purpose or other, but the errand given up when halfway; letters are written, sometimes of one tenor, then of another, and, when sealed and addressed, thrown into the fire; in short, deeds done which the better self abhors and therefore undoes. I will quote here what a patient said to Dr. Tuke, and taken from his work. "I have my reason, but I have not the command of my feeling; circumstances in life create feelings and prejudices which prevent my passing through life smoothly. My *intellect* is not

insane ; it is my feelings I cannot control." Never was there a better description given. Such patients actually know and feel their disease, but, although they can partially avoid overt insane acts for a time, they cannot avoid the wrong impulses. This fact induces many to seek advice from a physician, or to place themselves voluntarily under the care of some institution, and they often are quickly cured. Unfortunately, however, some are doomed to insanity for life, often a short one, for many commit suicide.

The prognosis of monomania is very unfavorable. Its character being in itself one of chronic insanity, makes it so. Almost all monomaniacs, if not relieved by death, pass into a state of dementia.

As we advance in the chronological order of the stages of insanity, we find the brain to become more and more pathologically affected, particularly in regard to that opaque milky exudation deposited between the membranes or their substrata, as well as their adhesions. It is, however, curious to note that in view of the above statement, so few changes in the brain are noticed in monomania, although it is generally conceded to be of a chronic character. The only reason we can assign for this seeming contradiction is, that, although we admit a functional disorder to be present, even if the alienation is confined to a change in only one direction, we must also admit that activity of the brain is correspondingly limited and confined, because on other subjects, but the abnormal, the patient shows no undue excitement. Even when the brain is congested and its vessels overloaded at the beginning of monomania, they seem to assume the natural state to a great degree after the first excitements, and when the acts and thoughts of the patient have run into their proper one-sided channel. But that a lesion of the brain can produce a change of intellectual functions beyond doubt, as hundreds of surgical cases verify. Even on moral manifestations a decided influence has been observed, as a case

recorded by Dr. Wigan will testify: "A blow upon the head with a ruler, changed entirely the moral feelings of a pupil. On examination the skull was found to be injured, and upon trephining, a bone, which had pressed upon the brain, was elevated, whereupon perfect recovery of mind followed."

Although monomania may be found to exist in as many forms as hallucinations or delusions may exist, there are some not only of frequent occurrence, but also of medical and moral interest, so as to justify a special mention. Among these is *homicidal monomania*. Two forms of this kind of monomania must be acknowledged. 1. When there is no cause for the act except an irresistible impulse to kill, and 2. When an imaginary cause *is* present, or where some object is in view for doing the act. These two do not include homicide by idiots, which belongs to another consideration of the subject.

Homicide by an insane impulse is often brought up in court as defense of a criminal. Care must be taken to do justice in our discrimination. Although a person may commit murder under such an impulse and be perfectly sane before and after the act, we shall generally find him or her to have done things at previous times which indicate insane ideas and delusions. One case described by Dr. Skae reveals the truth of the existence of a sudden impulse to kill, for "she deplored in piteous terms the horrible propensity under which she labored." On the other hand we ought to be equally cautious not to consider a criminal insane without having a clue to see the insane propensity. (*Vide Forensic Medicine.*) As for homicide, with imaginary causes, I can give you only a few of the latter, and of designs which these unfortunates feel, and by which they are forced to execute such terrible deeds. 1. A belief that some one intends to kill him or her. 2. In the belief of doing a christian act by sending one to heaven. 3. A revenge for imaginary wrongs or insults. 4. The illusion that voices are

heard constantly urging to the act. 5. Mistaken identity for a person against whom there is a deep grudge. 6. Political excitement; saving the country by killing its enemy. 7. A morbid feeling of pleasure to kill. Some disease of the body producing temporary insanity, viz., epilepsy, puerperal state, and all diseases of the digestive tract, uterus, heart, etc., are often productive of homicidal mania.

Suicidal Monomania is either a monomania in itself, or finds its cause in another disease of the supreme functions of the brain. Let us see: 1. A person in health has an instinct for love of life; this instinct, when perverted by unsound ideas, may result in love to take it. 2. A person in deep mental distress (melancholia), when not debarred by the feeling of religious wrong, may be tempted to relieve the suffering by suicide. 3. Hallucinations and delusions—a person hears and believes in a commanding voice ordering self-destruction; another sees an imaginary form leading him or her into a river; another is under the impression that he must sacrifice his life to God, and various others. 4. In many cases suicide can be traced to sudden mental alienation, the result of bodily ailments—same as in homicidal monomania—also to remorse from habitual drunkenness.

The age at which most suicides occur is between forty and fifty years. Some remarkable cases are on record where it occurred in children.

Men commit this act more frequently than women. The season when the insane commit this act is most frequently during spring and summer, and, according to my observations, almost invariably before the outbreak of a storm. The manner of committing suicide is most frequently, in hospitals, by strangulation or a sharp instrument, out of hospital by strangulation, drowning, and firearms; in France frequently by suffocation with charcoal.

Kleptomania is an insane longing for other people's property, an irresistible impulse to steal, no matter how trifling

the value, and no matter whether the thief is rich or poor. It is usually associated with other symptoms of insanity.

Erotomania is essentially a disease of the brain, accompanied with great mental and bodily depression and a low condition of the system. With it there is a morbid mental condition, wherein the imagination to love some body or some one overrules sound judgment. It is distinct from nymphomania or satyriasis, first, by the individual not entertaining lewd thoughts, and, secondly, by none of the sexual organs being concomitantly diseased. *Erotomania* proper affects principally the young and ardent temperaments of great susceptibility. The prognosis is not very favorable; unless cured at the beginning the patient rapidly emaciates and sinks.

Nymphomania is due to an irritation of the sexual organs in the female, caused most frequently by inflammation of the mucous membrane of the sexual passages, or by an eruption therein, or by an acrid and irritating flow, either catamenial or otherwise. It is also often the result of masturbation. Aside from the external passages, irritation of the uterus or ovaries may be set down as a cause, the latter producing hallucinations, such as imaginary cohabitation and the like. It is generally accompanied by great excitement both bodily and mentally, flushed face, restlessness and insomnia, and the special mental characteristics—lewd thoughts, utterances and acts so outrageously low and disgusting as to throw the doings of the most depraved of public women into the shade. The acts of nymphomania are too filthy to be mentioned.

Satyriasis.—What nymphomania is in the female, satyriasis is in the male, and therefore little need be said about it. The cause is also irritations of the sexual organs, masturbation (very seldom the opposite want of sexual intercourse, as stated by some). Prognosis of nymphomania favorable, of satyriasis less so.

Pyromania, or a morbid impulse to burn. This diseased mental condition, with a *propensity to destroy things by fire*, is seldom seen in a distinctive form, but associated with other forms of insanity, viz., imbecility, melancholia, mania, monomania (destructive mania), dipsomania, and epileptic mania. It is sometimes very difficult to ascertain whether the setting on fire is due to an impulse or to disease. According to Marc it occurs mostly to young persons, and has been by him attributed to an abnormal development of the sexual organs. This is problematical. To decide whether the act can be attributed to a diseased brain, we must carefully examine the general state of health in regard to the vegetative as well as the nervous organs, and look for spasms, epilepsy, catalepsy, etc. Like homicidal mania, it does sometimes appear simply emotional, an impulse without intellectual disorder, or simply as a pleasure to see a blaze.

Dipsomania.—An irresistible impulse to intoxicate oneself. The means used are alcoholic stimulants, opium, haschish, and other drugs. In this subject we only admit cases where cerebral disease is the sole cause of inebriety, and to come to a correct conclusion in regard to this, we must search for symptoms, other than are usually found in a habitual drunkard; in other words, look for signs to lead to a conclusion of insanity. Irresistibility has been pointed out as the best diagnostic mark, but I think that this word will not help us. Irresistible! When? when you cannot get any? then the dipsomaniac and the drunkard can alike do without it, and to get it, both will use every means and trick, fair or foul. Better signs are the physical conditions, the sleeplessness, the soft quiet pulse, (so different from the drunkard), the cold moist skin and the prostration; another important one is its periodicity or intermission. During the intermission, the dipsomaniac *hates* any kind of intoxicating drinks. To the chronic state of dipsomania, as described by

Hutcheson, I cannot say Amen. It is only a description of a drunkard by habit. Prognosis unfavorable. Post mortem appearance: effusion of serum in the ventricles of the brain and the arachnoid, atrophy of nerve fibres and grey substance, deposits of fat in liver and heart, also sometimes in the nervous tissues, in form of granulated patches. The mucous membrane of the stomach and small intestines is hard and thick, looking more like fibrous than mucous tissue to the naked eye.

Although treatment of insanity will be discussed in a special lecture, that of dipsomania cannot be well included in it, therefore a few remarks here. Restraint for a long while is undoubtedly the best remedy, and has been the most successful. In case of great nervous uneasiness following the restraint, aconite, alternated with digitalis has been effective, and in case a substitute to supply the alimentary canal, particularly the stomach, with a stimulus, is necessary, I believe there is nothing better than chloric ether with nux vomica. A very liberal nutritious diet of nitrogenized food must be given to the patient. Moral persuasion that the confinement and restraint is for his or her own good, is very valuable as an adjuvant to medicine. All facilities to allow him or her to do some thing self-responsible. Particularly if a direction for managing his own affairs by writing can be allowed, it will act beneficially on the mental state.

TRANSLATIONS.

ART. VIII.—Note on Generalized Vaso-Motor Paralysis of the Superior Extremities. (Duchenne de Boulogne.) Translated by BERNARD ELLIS, M.D., etc.

The study of clinical characteristics has preceeded, in the case of most diseases, the physiological researches, which furnish more or less accurately the rational explanation of

their causes. It has been otherwise as regards those morbid phenomena which are assigned to the action of the nerves that preside over the functions of the blood-vessels. Experimental physiology, which, in 1727, under the auspices of Pourfour du Petit, went in advance of pathological observation into a new channel, indicated the course of certain vascular troubles before these phenomena had attracted the particular attention of clinical students. Nevertheless, though many experiments have followed in long succession, though the most eminent physiologists have multiplied acquisitions of science in relation to this subject, it seems reserved to pathology to deliver final judgment on the theories propounded, after weighing well the facts, and bringing out those distinguishing characters which nothing can differentiate in so delicate a manner as disease itself.

Hence it is that a peculiar interest should pertain to those clinical observations which happen to test the theories of physiologists, and as the cases which have been recorded are yet but few in number, and as diseases of this kind are not a little obscure, it is most important to note all the signs which may clearly fix their boundaries and indicate the path of scientific progress.

The recent observations of Dr. Maurice Raynaud* on Local Asphyxia of the Extremities, present pathological facts of considerable interest, and which appear to fall in with the theoretical explanation deduced from physiological experiments. It is well known that when we divide the sympathetic nerve, there are produced phenomena of vascularization and of calorification in corresponding parts of the body, which disappear when we galvanize the peripheral end of the separated nerve. Then the vessels contract again, and the heat diminishes. It should, however, be re-

* Raynaud.—*Nonvelles recherches sur la nature et le traitement du l'asphyxie locale des extrémités.* Archives General de Médecine Janvier, 1874.

membered that diminution of the temperature may be the result of other causes than the action of the sympathetic. Thus: first, if we sever the fifth pair, hyperæmia of the conjunctiva will follow, and yet there will be a decrease of temperature; second, if we tie the veins of a rabbit's ears, the small branches dilate, and there is stasis of the blood, whilst the ears become cold.

In these cases, according to the elegant experiments of M. Claude Bernard,* a notable augmentation of temperature follows on the section of the sympathetic nerve.

It is different, however, with respect to the phenomena of decreased temperature and ischæmia, produced by ligation of the arteries.

Now, in the cases observed by Dr. Raynaud, "the extremities," he remarks, "become the seat of decreased temperature, accompanied by cyanosis, lividity, and by sensations more or less painful." Afterwards, in the more serious cases, gangrenous spots make their appearance. The disease affects a symmetrical form, and these accidents may be intermittent. He believes that these phenomena must be attributed to a vice of vaso-motor innervation, and that the symmetrical form of the lesions has for cause an excitement proceeding from the center of the spinal cord.

His hypothesis asserts the existence of a vascular spasm in the ultimate ramifications of the blood-vessels, varying from simple diminution of calibre to complete closure. With this closure we should have a bloodless and cadaveric condition of the part, whereas "the minute arteries alone being closed, and the smaller veins open, we should have venous stasis produced, whence the cyanosis and livid aspect which we see in a majority of cases."

This hypothesis offers some difficulties. We know it is true, from the experiments of M. Brown-Sequard,† that irri-

* Claude Bernard.—*Leçons sur la physiologie et la pathologie du système nerveux.*

† Brown-Sequard—*Course of lectures, etc.,* page 147, 1860.

tation of the vaso-motor nerves produces partial ischæmia, abatement of temperature, pallor, and a marked lowering of the vital activity. But we must not forget that in diseases of this kind very important lesions have been found by Professor Charcot, who writes, "As to the instances of spontaneous gangrene which have been connected with a vascular spasm, they should not have, judging from my own observations, the significance which has been accorded them, because in all cases of this kind which I have happened to encounter I have found the caliber of the vessels either diminished by a morbid alteration of the arterial walls, or obstructed by a thrombus."*

Diminution of temperature is likewise found in scleroderma,† in which we may believe the caliber of the minute vessels of the skin is decreased, because of the morbid production of much finely granular matter in the meshes of the connective tissue. This would give rise to pressure from without. Indeed, according to Rassmussen, an infiltration of small cells into the vascular sheaths constitutes the principal point of the histological alterations.

These instances go to prove that local mechanical causes may of themselves alone be sufficient to account for the phenomena described by Dr. Raynaud, without involving central irritation of the spinal cord. In fact, when we recall the experiments of M. Waller, who has observed hyperæmia to follow quickly on ischæmia because of the exhaustion of nervous energy, we should be tempted to conclude against the existence of a continued spasm (in non-hysterical cases) were it not that M. O. Weber asserts that he has succeeded in producing a constant irritation for nearly a week of the

* Charcot—*Leçons sur les Maladies du System Nerveux*, recueillies par Bourneville, 1872-73, p. 126.

† Professor Ball has recently (March, 1874) communicated to the *Société de Biologie* a most interesting case of scleroderma, in which the decreasing temperature was well shown.

cervical sympathetic, marked by a decrease of temperature to the extent of 2° centigrade (or $3\frac{1}{2}^{\circ}$ F'). Even then, however, there arose no troubles of nutrition. It should be added that Dr. Raynaud cites, in support of his hypothesis, certain unusual pulsations in the central vein of the retina, and partial spasmodic constrictions of the arteries of that region, which have been occasionally met with in the cases of local asphyxia collated by him.

The following case, that of a patient whom Dr. Duchenne (de Boulogne) submitted to my examination, requesting me to put on record my opinions—in which he concurred—offers a direct confirmation of some remarkable facts demonstrated by experimental physiology, and which may, it is hoped, serve to clear up some points which have been hitherto obscure.

History.—C., aged fifty years, a copper trimmer, is a man of robust constitution and florid complexion, who has hitherto enjoyed excellent health. He has had neither cough nor colic, nor any of the symptoms usually assigned to copper poisoning, whether the heart, the respiratory or the digestive organs be considered. The hands, which are in an abnormal condition, present no lesion except the cicatrix of an old whitlow on the left forefinger. He came to be treated for impotence, and that, at first, was all he complained of; but other phenomena were soon discovered, some of which were traced back several years. By careful questioning the following facts were elicited:

In 1872 he was aware of weakness in the arms and legs, but most especially in the knees. This sensation, however, neither became localized nor remained constant; it seemed to flit through all his members. In 1873 he noticed it to predominate in the left knee. This uneasy sensation, which caused no pain and was transient, seemed to ascend along the leg from the calf to the thigh, and the proof that it was not merely a subjective sensation lies in the fact that the

weakness of the leg increased so much at times that he was obliged to sit down. He usually recovered, however, in a few minutes, and was able to go about his work as before. No aggravation of his symptoms occurred when he walked out; on the contrary, the exercise did him good, and after a brisk walk of half an hour he felt a marked sensation of pleasurable ease. The disorder, as we see, was intermittent, showing itself after intervals of comparative health.

In January last, however, he was attacked in a more enduring manner in both upper and lower extremities, the sensation of debility being greatest in the left arm and right leg. So much was he enfeebled, that whereas when formerly attacked he could lift a weight of two or three pounds, he became at this time unable even to keep his forearm flexed upon the arm. He preserved the power of flexion, but not the power of maintaining it; for in a few seconds the forearm would fall of its own weight. At this stage the muscular force of the hands, tested by the dynamometer of Dr. Duchenne (de Boulogne), was equivalent, on an average, to 43 kilogrammes, or 94.6 pounds.

The color of his hands had become of a deep red, and this florid flush extended up the forearms, gradually diminishing in intensity. Let us add that, notwithstanding the vascular disturbance, there was no symptom which could be referred to the existence of scleroderma, to which there was some superficial resemblance.

The patient complained of great heat in the hands and forearms, and this increase of temperature was plainly perceptible to all who touched them; and it is a very remarkable fact that their sensibility was so greatly augmented that every thing he touched—instruments, wood, or paper—appeared to him cold as ice. He was troubled with formication in the forearms, which increased to a distressing degree when he rubbed his hands together, as in washing them.

Heat aggravated, and cold diminished the pain—facts of which he became aware from using cold and warm water.

As to the inferior extremities, they present different phenomena. There was, indeed, debility, as has been remarked, but the symptoms of the disease seem to have decussated. Thus, whilst the left arm was the weaker, the right leg was the more feeble. Instead of the hyperæsthesia which we observed in the hands, there was a notable loss of sensibility in the right foot, so that he did not feel the ground when walking. His foot seemed to him asleep or benumbed. There was at times slight formication in the right leg, but very little in the left. Nor was there a hyperthermal condition here, as in the upper extremities. Although the temperature of the soles of the feet seemed normal to himself during the day time, it had been remarked that when lying down and during the night they were icy cold to the touch.

In the lumbar region he had felt an intense itchiness, as though he had been beaten with nettles. This unpleasant sensation was not constant, and had only appeared five or six times in all, and then only in the morning and at night, when he was dressing or undressing and exposed to the cold air—phenomena occasionally found in the case of persons suffering from urticaria. There were no ridges or wheals perceptible.

It is highly interesting to note that when this urticaria made its appearance in the loins, the formication disappeared from the upper extremities.

As there was reason to suspect the existence of ocular troubles, we questioned his memory, and found that he had observed something like a mist before his eyes, especially at night. This disorder had, in fact, reached such a point in January last (1874) that he had given up attempting to read.

On his left eye-ball a harmless pterygium was remarked.

On applying the ophthalmoscope, Prof. Panas found that the fundus of the right eye was normal, whilst there was a very marked pathological excavation of the papilla of the left eye, the fundus of which was slightly congested.

Let us note, in conclusion, that during the continuance of his ailment he complained of great thirst, and of unusual drowsiness after meals.

Treatment.—Dr. Duchenne (de Boulogne) considered it proper, in this case, to try faradisation of the upper extremities, and this treatment was crowned with rapid and complete success. The patient remarked that he felt relief from the first application. After the seventh application, the following facts were established:

1st. The almost complete disappearance of the dark-red abnormal color, and the restoration of the natural temperature.

2d. The absence of the debility complained of, and the restoration of the muscular strength to nearly the normal standard.

Before the treatment he could not lift, at his best moments, a weight of four or five pounds without great effort, followed by extreme fatigue; he can now raise a considerable weight without experiencing any inconvenience. Tested by the dynamometer, the muscular force of his hands has increased by over four pounds.

The impotence, unusual thirst, and drowsiness after meals have disappeared, and his sight, although not yet perfect, has been so much improved that he can now read with comfort.

Etiology.—It was impossible to discover any fact in the patient's history to which we could with certainty attribute the origin of his disease. Nevertheless, it seemed to me not improbable that whilst working at his trade he might have been subjected to the influence of some kind of metallic poisoning, which acted on the nervous system, producing effects

not previously described. Suspecting this, and having discovered, during my microscopic investigations of the atmosphere, the presence of metals, in a finely divided state, in the air of various work-shops, I questioned him as to his occupation. In trimming copper, and removing any roughness there may chance to be present, much dust is caused, and he admitted having "swallowed" a quantity of it. Now, this dust, of which I obtained a specimen, contained the metal in a fine powder, which, when carried about by currents of air, would necessarily be drawn into the lungs.

It may be asked whether copper will affect the system in a manner such as that characteristic of this disease, or at all? Some authors—as, for instance, Doctors Boys de Lowry, A. Chevalier,* and Dr. de Pietra Santa†—have, indeed, denied the noxious influence of copper, even though the bones of operatives are known to become green-colored, owing to its absorption, a fact discovered from the *post mortem* examinations conducted at Durfort, Tarn. Blandet,‡ on the other hand, asserts that a metallic colic is the inevitable tribute paid to the influence of copper by all apprentices, and adds that adult workmen not seldom suffer from it themselves.

Becquerel, though at first disposed to admit the existence of a specific copper-colic, has since come to the conclusion that a true enteritis is produced, in which, among other symptoms, increased thirst is manifested, whilst the tongue may be normal, dry, or red. Three cases which came under his own observation had been evidently developed under the influence of copper-poisoning.§

Although these authors have not observed upon the exist-

* Chevalier.—*Notes sur les ouvriers qui travaillent le cuivre*. Annales d'Hygiène, t. XXXVII., p. 305.

† Sietra, Santa.—*Union Médicale*, 23d October, 1850.

‡ Blandet.—*Journal de Médecine de Trousseau*, March, 1845.

§ Becquerel.—*Traité d'Hygiène*, p. 940. 1873.

ence of any nervous symptoms, there can be no doubt that the nervous system is implicated when cases of copper-poisoning take place. Thus, at different stages, the patients suffer from violent headache, from a sense of constriction in the throat, an acrid taste in the mouth, a burning thirst, and severe cardialgia. It remains to be seen whether a more rigid investigation into the health of copper-workers would not result in discovering the occasional presence of symptoms such as those found in the case of our patient C., symptoms which might readily have been overlooked when colic and enteritis had shown themselves, for these are not only more disagreeable diseases, but also more easily diagnosed.

Theory.—It is proper here to point out, in the first place, how closely the principal phenomena noted in this case harmonize with the data furnished by experimental physiology, and afterwards to examine whether we have not discovered some indications which may project light upon obscure points.

We know already that when the normal action of the sympathetic nerve has been interrupted, we should expect to find pathognomic phenomena beyond the lesion. A marked increase of the vascularity and temperature of the corresponding parts of the frame is manifested, exactly as we have seen it take place in our patient. Is this increase accompanied by formication? To such a question, experiments made upon animals can give no answer; but taking into consideration the statements made by our human patient, we should conclude that the existence of formication in animals thus treated is highly probable.

Presenting as they do identical phenomena of increased vascularity and augmented temperature, it seems of necessity to follow that they experience also a heightened sensibility and are affected by a like formication. This is a conclusion which experimental physiology may borrow from clinical observation, and it should accept it with the less hesitation

as it appears to be corroborated by an experiment of Dr. Samuel.* Having faradised the casserian ganglion in a rabbit, there were produced among other effects slight hyperæmia of the conjunctiva and an exaltation of sensibility so extreme that at the least touch of the eye-ball the animal was seized with general convulsions.

In the case of our patient, the contact and friction of the hands, even so slightly as in washing them, were enough to augment the sensibility to such an extent as to cause considerable distress. Like sufferings are felt when, owing to excessive reaction, there is a great afflux of blood to parts benumbed or frozen by intense cold. As regards our patient, the augmentation of temperature and of sensibility was so great as to render it painful for him to work at his trade, seeing that everything he touched, even wood and paper, gave him a sensation of icy coldness, and thus it became impossible to handle his tools without positive suffering. In a less robust individual the suffering would probably have manifested itself still more. The patient did not complain of any congestion of the conjunctiva, though some traces of it were perceptible; we could scarcely consider them, however, as of nervous origin. It is otherwise as regards the congestion of the fundus of the left eye, which seems attributable to the same cause as the peculiar debility noticeable in the left arm, although both hands were affected by the hyperæmia.

Dr. Raynaud has observed that the veins of the fundus oculi appeared a little more distended, and the capillary network a little more voluminous in rabbits, after he had severed the sympathetic at the neck. On subjecting the distal end to the action of electricity, he saw the central artery grow pale and almost entirely disappear.

But irritation produces a much greater effect, according to the experiments of Dr. Adamiuk, of Kazan, who writes, "If

* S. Samuel—Die trophischen nerven, p. 61, 1860.

taking an animal under the influence of curare (woorara), we irritate the sympathetic center of the spinal cord, on a level with the two inferior cervical vertebræ (Budge), and if, at the same time, we examine the eye with the ophthalmoscope, we shall recognize immediately in the vessels the same distribution of blood which we see in glaucoma—the veins are greatly distended and the arteries contracted.”* [We should in like manner expect to see, when the action of the sympathetic is interrupted, a hyperæmia produced by distension of the blood-vessels, consecutive on irritation of the dilator nerves.† Clinical observation appears to support here also the distinction laid down by MM. Claude Bernard, Brown-Sequard, and Charcot, between the results resulting from a single section and those produced by an irritation of the nerve.]

Fever and simple paralysis of the muscular walls of the vessels explains to us neither the alterations of temperature and sensibility nor the ocular troubles of our patient. We are obliged to infer the existence of a central irritation of the dilator nerves, with a correlative exhaustion of energy in the constrictor nerves. But how shall we explain the success of the treatment upon this hypothesis? When without any lesion of the ganglionic system the anterior cornua of the spinal cord have undergone rapid change, as in the case of infantile myelitis, Dr. Duchenne (de Bologne) has found that the skin is discolored or cyanotic, the vessels being contracted, and the temperature lowered, whilst at the same time the muscles are atrophied. The heart-beats preserve

* Adamiuk—Étiologie du Glaucome, *Annales d'Oculistique*, t. lviii, p. 45, 1865.

† It is an error to say, as some have said, that the theory of dilator nerves has been abandoned by all but Dr. Duchenne (de Bologne). The eminent physiologist, Claude Bernard, sustained it with forcible arguments in his lectures delivered during the present season (1874) at the College de France.

their normal energy, the pulse is not enfeebled, but the impressive force of the blood suffices no longer to dilate the minute vessels. The dilator force, proceeding from the cerebro-spinal system, being destroyed, there is predominance of the constrictor force, coming from the (uninjured) ganglionic or great sympathetic system. Now the first effect of treatment by direct muscular faradisation in such a case should be rubefaction of the skin, followed by elevation of temperature and augmentation of sensibility.

If that be so, how comes it that in a case of hyperæmia faradisation can bring about a cure, which depends upon a diminution of the temperature, redness, and sensibility?

First, admitting, for the moment, that the theory of blood stasis propounded by Doctors Brown-Sequard and Waller be correct, then it would follow that faradisation, that is to say, that the cause which would produce the paralysis of the muscular walls would also cure it, which is absurd. Now, the cure itself is an established fact, and the cause of the apparent contradiction is not very difficult to explain if it be conceded that we have to deal with two distinct nervous systems.

When describing the effects produced by faradisation, such as rubefaction, Dr. Duchenne (de Boulogne) put the following question: "Why do not the vaso-motor constrictors, which topical faradisation ought to influence, when it influences the vaso-motor dilators, produce constriction of the vessels at this time? I confess that at present I do not know the reason. I confine myself to stating the fact"* Taught by the phenomena observed in our patient suffering from hyperæmia, we may suppose that in cases of infantile myelitis, characterized by ischæmia as described, the ganglionic system then exerts its constrictor power to the utmost, not being moderated by the action of the suffering cerebro-spinal system.

* Duchenne (de Boulogne) *De l'électrisation localisée*, p. 157. 1872.

In that case the electric excitation, which no longer acted on this nervous system, then at its highest tension (so to speak), passed altogether (by direct or reflex action) to influence the cerebro-spinal system and increase its dilator force, so that, thanks to its assistance, equilibrium was restored and even a reaction produced.

The phenomena observed in the case of the patient C—— may be explained in a similar manner. Here the pathogenic irritation lies in the cerebro-spinal system, the action of the sympathetic suffering in some way is partially abolished, and its constrictor force arrested. The dilator force of the complementary system is, consequently, free to exert itself to the utmost, and the result is that augmentation of vascularity, temperature, and sensibility, which we have seen. Then the faradaic excitation must pass over that system, which is at its highest tension, so that all its force goes to influence the ailing ganglionic system, and the equilibrium is again restored.

That the electric stimulus should produce a greater effect upon an unsound than upon a healthy system is, besides, no more than we ought to expect, judging from the general facts, of its therapeutical action.

As Professor Schiff affirms that alterations in nutrition take place readily, and develop rapidly in regions which have become hyperæmic, and as this opinion has been contradicted by Professor Virchow and other observers, it will not be without interest to notice that an inflammatory lesion showed itself in one of our patient's fingers when he was almost cured. The inflammation affected a joint of the left fore finger, the same which was marked by a whitlow scar, so that there was local debility. This tends to confirm, so far as it goes, the view taken by Dr. Claude Bernard, who holds that such lesions take place under conditions of local enfeeblement.

The inflammation referred to, it may be remarked, passed off without giving any trouble.

The phenomena observed in the inferior extremities demand our attention also. They were the converse of those seen in the upper extremities. The lowering of the temperature, and the diminution of the sensibility described, combine, with the impotence of which the patient complain, to indicate a lesion the converse of that which we have been studying.

The "erector-nerves" of Eckhardt are acknowledged to be dilator-nerves, the existence of which in the abdominal region has been established by Dr. Claude Bernard.

The objections raised by some to the existence of dilator nerves can not apply here, and if there was no hyperæmia in this region it was obviously not for want of a dilator apparatus. Since, therefore, the means of action were not deficient, it seems to me that we must attribute the ischæmia, anæsthesia, and lowering of the temperature, to compensating effect of remote action, an exhaustion in the inferior nerve-region being correlated with, and compensatory to, the abnormal excitement in the superior, and *vice versa*. Clinical facts prove the probability of this view in attesting the existence of complementary alternations.

Thus, in certain diseases of the nervous system, ischæmia has been observed to follow hyperæmia, and hyperæmia to be consecutive on ischæmia, as atony follows spasm. Hence, when we see hyperæmia and ischæmia produced at the same time, there is reason to believe that one is the complementary result of the cause which produces the other.* From these data it seems to follow that we should recognise the possible existence of similar troubles elsewhere than in the

* The hemi-anæsthesia of hysteria offers in this relation very important phenomena. Half the body (vertically) is smitten with palor and coldness, united with an ischæmia more or less permanent. Now Professor Charcot has demonstrated that a most remarkable relation exists between this hemi-anæsthesia and ovarian hyperæsthesia. [CHARCOT.—*Lçons*, p. 209, 1872, 1873.]

exterior of the body. Since they have been observed in the interior of the eye, why may they not exist in the heart, for instance, or other internal organs, either in alternation or simultaneously with external manifestations, or be altogether internal? * A correct diagnosis and accurate investigation yet remains to be made of those obscure, uneasy sensations, dull pains, flushes of heat, chill shivers, vague feelings of oppression, and other disorders which many invalids experience.

Dr. Raynaud has observed a case where coldness and cyanosis of the extremities, on the one hand, and ocular troubles on the other, alternated during several months. He states, also, that a patient who had cold hands, with numbness and cyanosis, complained of uneasiness in the precordial region. "The patient," he remarks with seeming incredulity, "professes to have felt, during a couple of months, a little oppression in the precordial region. A careful examination of the heart gives absolutely negative results."

The ophthalmoscope exists, but the cardiascope has not yet been discovered. It is, however, logical to believe that a transient and non-inflammatory hyperæmia may exist. It should be suspected, for instance, and studiously sought after in cases of alleged oppression, and in cases of nervous palpitation, where there is a sensation of precordial uneasiness, with faintness and syncope—remote results. †

* The preceding note confirms this view, as it shows hyperæsthesia of an internal organ, correlated with external anæsthesia.

† The phenomena of cerebro-cardiac neurosis, described by Dr. Kriszaber, a Hungarian physician, offer some analogies with those mentioned. In his writings, which may be consulted with advantage, he classifies the symptoms of this disease under four heads: first, discords of the senses; second, of locomotion; third, of the circulation; and fourth, secondary troubles. To the first group belong false or prevented conceptions, and hyperæsthesia of the senses. The second includes giddiness and vertigo, causing abolition of the sense of equilibrium or balance power. This may

Where exanthemata threaten, we often find, as in febrile urticaria, the disease ushered in by shivering, nausea, cough, and fainting-fits. These symptoms usually vanish when the eruption makes its appearance on the surface of the body. Such phenomena caused Trousseau to admit the possible existence upon the bronchial mucous-membrane of an eruption analagous to that which afterwards shows itself upon the skin. Finally, the recognized existence of hyperæmia in several organs should dispel objections and stimulate to further investigation.

It is manifest that in the present state of science, no final judgment can be pronounced upon the hypothesis which we have been discussing. The time has not yet come. But it appeared to us that there were space, opportunity, and need for an effort in this direction, and we believe that, in any case, the assemblage and bearings of the facts here set forth open new horizons to pathological science, and promise an abundant harvest to those observers who shall consent to engage in this order of research.

be followed by paresis, made known by a feeling of lassitude or exhaustion, by involuntary movements, or by paraplegia. Disorders of the circulation consist chiefly in an irritable state of the vascular system, such that the least movement, as the act of sitting up in bed, or rising from a chair, may quicken the pulse by twenty, thirty, or even forty beats a minute. A person may be seized in the midst of his business, without any fore-warning, by a peculiar feeling in the head, as of a flash or an ascending wave, then instantly follow a deadening of sensation, humming in the ears, flashes of light in the eyes, or photopsy, and at the same time a sensation of anxiety and anguish in the region of the heart, accompanied by palpitations, extreme uneasiness, and a general impressionability or "nervous" state. Simultaneously, or a few moments after, vertiges may occur, and titubation or staggering, and some times paraplegia. But it happens also that instead of being paralyzed, the patient experiences an extreme agitation, which impels him to walk about in spite of himself. Some times swoonings and syncope are observed to take place at the same time. These fits tend to recur, with diminishing intervals. KRISHABER.—*De la nevropathie—Cardiac.*

CLINICAL RECORDS.

ART. IX.—*Case of Puerperal Eclampsia. Recovery.* By J. T. DAVIS, M.D., Fellow of the Zanesville Academy of Medicine, and Member of Muskingum County Medical Society. Reported to M. C. M. S., August Session, 1877.

May 29, 1877—8 P.M. Mrs. W., aged 24, pregnant for first time; expects to be confined in a month; is sick at the stomach, and has vomited several times during the afternoon; said she had headache, but not severe; had taken a dose of salts during the forenoon; it had not operated. The temperature was not taken. Pulse 80; tongue moist and clean. Concluding that the nausea and vomiting, with headache, were the result of her pregnant condition, and not having any apprehension as to what was soon to follow, I prescribed bismuth, oxalate of cerium, and sulph. morph., a powder to be taken at once, and if not better in two hours, to be repeated. Recalled at midnight. I was informed by the husband that she felt better soon after taking the first powder, and took the second before going to bed, some time after ten o'clock; said he was aroused about twelve o'clock, and found her in a convulsion. Not knowing where I resided, he called on Dr. Ball, who told him where I lived, sent him for me, and said he would meet me at his house. When I arrived Dr. Ball had bled her to the extent of forty to fifty ounces. She had had several convulsions prior to the bleeding, and two afterwards, twenty minutes apart. After the bleeding the pulse was still very strong and full, which made it probable for more convulsions to follow. As the patient had a badly deformed pelvis, without space for a

fully-developed child to pass through, we decided to bring on labor at once, if possible. But upon examination the os could not be found. Any farther proceedings were postponed till morning. Dr. B. left, saying that it was a very serious case, and requested me to remain with our patient. I put her under the influence of chloroform, and in the course of an hour the pulse came down, requiring only the inhalation of a little chloroform at long intervals. Large mustard plasters were applied over the abdomen and to the back of the neck. Cold applications were applied to the head. A large enema of salts was given, and as it did not come away in three-quarters of an hour, it was repeated. The bowels failing to move in due time, I gave her two drops of croton oil, which was followed by large, watery stools. About six A.M. I ceased administering chloroform. She still complained of her head aching. I then prescribed forty grs. of potassic bromide, half drachm each fld. ext. buchu and spr. nit. ether, to be given every two hours.

9 A.M. I examined her again, and found the os readily. It was soft and dilatable, so as to admit my forefinger. I then concluded to dilate the os and bring on labor. Through the kindness of Drs. Ball and Holston I was furnished with one of Dr. W. Molesworth's Climax Dilators, and about eleven A.M. I began dilating the os by using tube No. 3, and injected it three times full of warm water. I let it remain in its position about twenty minutes, when all at once it came away. An examination disclosed that the os had dilated to about the size of the top of a tea-cup. I gave her ʒi of fld. ext. ergot, which was repeated in half an hour. About one o'clock P.M. I noticed my patient was somewhat restless at times, which I attributed to labor pains. I examined again, and found the os soft and dilated, with a large bag of waters protruding. I gave her more ergot, put her under the influence of chloroform, ruptured the membranes, and about two P.M. delivered her of a dead child weighing

about five and a half or six pounds. The parietal bones were considerably overlapped. The placenta came away in about twenty minutes.

I visited her at 9 P.M.; found her sleeping soundly, but could be aroused, and would answer questions, but would drop off to sleep in a few moments. Her pulse was 120, strong, with considerable fever. Bowels had moved several times during the afternoon, and she had passed urine quite freely. I gave her 12 drops of *tr. veratrum viride*, and requested 5 drops to be given to her every four hours. I continued the potassic bromide in 20 grain doses, with the diuretic mixture, every two hours; also to have the vagina washed out with a solution of carbolic acid.

9 o'clock A.M., Thursday. Patient still inclined to sleep; would awake often and ask for water. Pulse, 85; temperature, 100. Bowels moved once during the night; urinated freely. She ate a slice of toast and drank a cup of tea for breakfast. Complains of no pain or tenderness about the abdomen. The bromide and diuretic mixture was continued every four hours.

3 P.M. The patient about the same.

9 P.M. Temperature, 100; pulse, 75. Bowels moved twice during the day; kidneys acting properly; no pain or tenderness; still inclined to sleep.

9 o'clock A.M. Temperature, 100; pulse, 75. Not so sleepy; said she felt quite well. She was informed this morning what she had passed through—all of which was a perfect blank in her memory.

9 o'clock P.M. Temperature, 98½; pulse, 75. Patient has been feeling quite well all day; not so drowsy; ate a light supper. All medicines were discontinued, and from this time the patient improved rapidly, and in the course of a week was up and about the house.

For more than twenty years past there has been going on a most active inquiry as to the etiology of puerperal con-

vulsions, with constant additions to our knowledge of the subject and frequent modifications of theory, but even at the present day science has not settled the question. Many writers have sought to divide puerperal convulsions into different classes, based either upon the difference of phenomena supposed to be offered in different cases, or upon difference in the constitutional condition of the subject in whom the attack occurs, or upon a theory of the cause of the convulsions. Thus one author would make three classes—the apoplectic, the epileptic, and the hysterical; another would divide them into the uræmic, hyperæmic, the anæmic, and the hysterical; another would only make two classes—the uræmic and the hysterical. Thus the theories in regard to the causation of eclampsia are numerous, but they admit of being divided under two heads—first, the toxæmic theories; second, mechanical theories. The former attempt to explain the cerebral condition, whatever it is, by the action of poison circulating in the blood; the latter try to account for the condition on purely mechanical considerations. As these theories are familiar to all the members of the Society, I would like to hear their views in regard to them.

ART. X.—*Case of Retained Ovary after Death of Fetus, Expelled in the Tenth Month of Pregnancy.* By G. S. STEIN, M.D., Columbus, Ohio.

Mrs. A., mother of four children. Symptoms of pregnancy manifested themselves about the first of July, 1876; health good from the commencement; some menstrual flow every month. About the first of December, or in the fifth month of her pregnancy, flow quite profuse, accompanied by pain. A physician was called, who gave her large doses of tincture opii and chloroform, which appeared to control the discharge and pain for the time.

Ceased to enlarge about the middle of January, or in the sixth and a half month of pregnancy.

February first, considerable discharge per vaginam, of a menstrual character.

April 29. At the end of her tenth month I was called in great haste; found the lady in active labor. Upon examination the cervix was felt elongated, the os sufficiently dilated to admit the finger, the presentation appeared normal, the membranes having ruptured one week previous, so I was informed.

The pain, in a short time after my arrival, appeared to be ineffective; ergot was given, which increased the pain very much, and the labor made satisfactory progress.

In two hours a mass was expelled into the vagina, which on being removed proved to be an ovum entire. There was considerable dark brownish fluid discharged with it. The fœtus appeared to be of six or of six and a half months development; its tissues were shriveled but firm; the umbilical cord was attached at both extremities, and very much shrunk and possessed very little strength; the foetal extremities were flattened; the cranial bones separated upon my attempt at removal from the bed to a more appropriate place. The placenta was expelled in a few minutes by a slight traction on the cord. The placental mass was about five inches long by four wide; its uterine surface presented no evidence of recent detachment, some parts of the foetal surface had apparently undergone inflammatory changes; there was a slight foetid smell about the ovum.

In reflecting upon this case, there are a few questions that suggest themselves. What determined the protracted retention of this dead ovum, where its immediate expulsion is the rule? Why did it not live to a mature birth? There was no sign, neither is there any reason to suspect an attempt at abortion. The lady in general enjoys good health.

ART. XI.—*A Case of Accidental Concealed Hæmorrhage, followed by Quick and Painless Labor.* By J. M. WHEATON, M.D., Prof. of Anatomy, Starling Medical College.

On the 29th of June last, I was called about noon to see Mrs. R., aged about thirty-two years, married, and in the latter part of the eighth or beginning of the ninth month of her fifth pregnancy.

I found her lying in bed, with pale and pinched countenance, anxious and restless. Pulse quick and thrilling. She stated that two hours before, while sitting in her chair engaged in some light employment, she became suddenly sick, and so faint as to get to bed with difficulty, and that she felt as though she would burst. Both herself and friends asserted that she had become much larger. There had been no external hæmorrhage, and no labor pains. A vaginal examination discovered no dilatation of the os uteri, or obliteration of the cervix. Ordered stimulants freely, and morphia, one-fourth of a grain every half hour.

3 P.M. Pulse less quick, and anxiety less marked; restlessness continues; vaginal signs unchanged.

7 P.M. No change, except that she had vomited.

8:30 P.M. Was called in haste, and found that she had flooded severely; restlessness, anxiety and pain all removed; felt comfortable, and had sent for me under the impression that the waters had broken, which was probably the case; a vaginal examination, however, showed no obliteration of cervix uteri, with but the slightest dilatation of the os, and very little softening; there had been no labor pains; feels well, though weak; stimulants and anodynes continued *pro re natâ*.

July 1, 9 A.M. Doing well; slight febrile reaction; passed a comfortable night.

3 P.M. No change; dilatation of os not sufficient to allow the passage of the finger through the cervex.

8 P.M. Condition the same; has had no medicine since morning; has no appetite; has felt no motion since sick;

had no sign of a labor pain at any time; no vaginal examination.

At 9 P.M., feeling an inclination to stool, got up, and before she could get back to bed, gave birth to a dead child of normal development. She stated that she had no idea of being in labor when she got up, and felt no pain "till the child came."

She remained weak and anæmic for three or four weeks, but is now in good health.

The case is interesting, perhaps unique, on account of the time the hæmorrhage remained concealed—ten hours; also, for the rapidity with which dilatation took place, as well as the entire absence of ordinary labor pains.

ART. XII.—*Case of Cancer of the Stomach.* By OTTO FRANKENBERG, M. D.
Prof. of Pathology in Starling Medical College.

I am indebted to my friend Dr. Stewart for the clinical history of the case, which is given in his own words, and also for an invitation to be present at the autopsy, which at his request I made, and report:

Mr. G. M., born in Pennsylvania; was married at the age of eighteen; learned the trade of moulder at the age of nineteen; had very severe attacks of pleurisy at the age of twenty and twenty-three, and a severe attack of pneumonia at the age of thirty-three.

Soon after this he moved to the State of Ohio. At the age of forty-two he had a severe attack of cholera; at the age of forty-five another severe attack of pneumonia; at fifty-one a severe attack of what is commonly called cholera morbus, and at fifty-three died of cancer of the stomach.

I became acquainted with this case about two years before his death. He was a temperate and industrious man, and had always worked at the moulder's trade; he began complaining of pain and tenderness of the stomach within

three years after learning his trade, more especially when working steadily, or after a hard day's work; he had frequent attacks of colic or cholera morbus, lasting from a few hours to a few days; much more frequent were these attacks during the last three years of his life.

He said that he had not been entirely free from pain or tenderness in or about the stomach for an hour for twelve years before death. During the last two years of his life he vomited his food occasionally, and suffered considerably from indigestion.

It was the general remark or observation among his neighbors that Mr. M. was gradually failing, losing both flesh and buoyancy of spirit, having been quite robust, and of a jovial disposition. About six months before death he had several front teeth knocked out by a prisoner in the penitentiary, and before fully recovering from this mishap, he was attacked with severe colic; the usual remedies were used, but without relief. The region of the stomach was then thoroughly vesicated, which gave relief for a time. He now began suffering in the face, head, shoulders, and chest, with very severe pains, seemingly neuralgic in their nature.

About seven weeks before death he came to me to have a tooth extracted; I told him it was not necessary, as the tooth was not decayed, but he insisted, and I removed it. The next day I removed a second tooth, but still there was no relief; the third day, the neuralgic pains ceased, except in the upper surface of the right portion of the lower lip, at a point opposite the canine tooth, where the pain was more or less severe until death. At the same time, stomach trouble began again, with severe nausea and vomiting; the bowels were constipated; stercoraceous matter was vomited quite often.

After about fifteen days of almost constant nausea and vomiting, having fully tried all known remedies without any relief, and not being entirely satisfied whether I had

a case of chronic gastritis, ulcer of the stomach, or cancer of the stomach, I called counsel. Dr. Loving, accompanied by Dr. Pooley, came, and upon examination it was decided to be cancer of the stomach.

I had been giving, for several days previous to calling counsel, ice or ice water by the mouth, enemata of beef tea, milk or egg-nog, and hypodermic injections of morphine. This treatment was continued, the doses of morphine being gradually increased until ten grs. per day were required to give the patient any relief from pain or vomiting. The patient lived twenty-eight days after counsel was called. About nineteen days before death he vomited a half pint of pus, and at three different times between vomiting pus and death he vomited small clots of blood, amounting in the aggregate to not more than one ounce. He vomited stercoraceous matter only during the first three weeks. After that it had the appearance of coffee grounds or coffee-colored water, with very offensive odor. The patient was not predisposed to cancer hereditarily, so far as known. His wife is, her grandmother, father, sister, and sister's three children all having died of cancer.

Now one or two queries. At what probable period of life did the cancer in this patient begin to develop? Also, could there be any possibility for a man to take cancer from his wife?

Post-mortem examination was at 3 P.M., twenty-six hours after death. The body was considerably emaciated, and presented that peculiar sallow, yellowish appearance which is spoken of by some as characteristic of cancer. Lungs slightly adherent on both sides, especially the apices. Lower lobe of left lung congested. The lungs were almost black, from the penetration of particles of coal into the substance of the lung itself, constituting the condition known as "anthracosis." The heart seemed normal. The stomach was found to be adherent to the liver and intestines, caused by inflam-

matory processes. In the anterior wall of the stomach, about midway between the cardiac and pyloric orifice, a perforation existed, circular in form, sufficiently large to admit two fingers, but did not communicate with the abdomen, as the parts had been previously agglutinated by the existing inflammatory process, but led into a small cavity, from which, in all probability, came the pus, already spoken of. Pus could not be discovered in the abdomen. The bottom of the cavity was formed by the liver, and at this spot only did the liver show signs of inflammation, not extending beyond the adhesions existing between it and the stomach.

A hard, irregular mass, extending from the pylorus along the lesser curvature of the stomach to within a few inches of the cardiac orifice, measuring six inches in length, two and one-half to three in breadth. The inner surface of this mass is rough, nodular, and ulcerated.

Left kidney has a cyst on its surface, in size equal to that of a pigeon egg, containing a clear, watery fluid. The other organs were normal.

Microscopical examination shows that the tumor is principally composed of fibrous stroma, with here and there a nest of cells. The cells are round in form, especially those found in the granulations of the ulcerating surface.

Next to the uterus, the stomach is the most frequent organ attacked by cancer, scirrhus being the most common variety. Of one hundred and twenty cases collected by Köhler (cancer of the stomach), fifty-nine occurred at the pylorus, seventeen on the lesser curvature, eleven on anterior and posterior surfaces, eight at the cardiac extremity, three on the greater curvature, three involving the whole stomach, and in one case at several points.

CORRESPONDENCE.

Prof. J. H. Pooley, Editor Ohio Medical and Surgical Journal:

DEAR DOCTOR: This year's heated term seems to be over, and we are having cooler weather now than we had even up to a few days ago. We have passed the middle of September, and we are now no more greeted with such exclamations from every one we meet with in New York, as, "Oh, how terribly hot it is! I am almost roasted to death! How sultry, how oppressive, how stifling it is to-day!" Somewhat reluctantly I commence my letter which I promised to send you, with referring to the state of the weather as it has been not long ago, and as it is to-day in New York, because, it is generally considered commonplace—nay, a want of intelligence—to commence a conversation or a letter by alluding to the state of the weather. I would not for all the world like to be considered commonplace, much less give expression to anything that might indicate a want of intelligence. My purpose, to speak seriously, in mentioning the weather as an introductory is to point out to your readers, and to lament the frightful mortality from which this city is suffering every summer, to which the excessive heat, no doubt, contributes its share as one of the causative agents; with others that might be prevented if due care was taken.

The culture, wealth, and refinement of this metropolis are mostly spending the summer at the different watering places, in the mountains, on the seashore, or by traveling

abroad. We physicians follow the people of refinement of other pursuits, and escape in summer as often as we can from the polluted, nauseating, overheated atmosphere of New York, which causes the frightful mortality here during the summer months, principally among the poor. Our colleges are then closed; our medical meeting and reading-rooms are deserted; and everybody who can afford it spends part of, or many, the whole summer in the country. On returning to our office in the city, we find that even pecuniarily we had not lost much by our absence, since the wealthy and many of the so-called middle classes of society are away from New York. Physicians who attend the poorer classes in New York are busier in summer than at any other season of the year. The dispensaries are overcrowded, but pay patients are scarce, and the practice of medicine is not at all remunerative here during the hot season. This is the rule. To this, as to every other rule, there are exceptions.

The consequences of the heat, and the culpable neglect of the first principles of hygiene in New York in many quarters, during the summer especially, are, alas! too well known to those who visit some portions of our city during June, July, and August, and have been so often referred to in our public press that it might be almost superfluous to say another word about it. I think, however, it should be agitated and referred to constantly, so that the slaughter of our innocents should cease where it can be prevented, by the study of hygiene and the observance of its laws, and I hope that, in the future, this science will be one of the chief studies of the conscientious physician, and people will then not die prematurely from and through ignorance, as they do now.

Compare, for instance, the officially published statistical data of the week ending August 11, 1877, and you will find that, while the mortality in New York, per thousand inhabitants, was forty and over, in San Francisco, under better hygienic and atmospheric conditions, the death rate for the

same period of time was only twelve. Taking the population of New York to be one million, there die in New York forty thousand human beings, while in San Francisco, with the same number of inhabitants, there would die twelve thousand—a difference of twenty-eight thousand lives spared, in favor of San Francisco, if the population were the same number there as it is here; or, in other words, twenty-eight thousand human lives unnecessarily lost in New York. Is it not well to pause and to inquire why should foggy London, in England, with four times the number of inhabitants as New York, lose only twenty-three per cent. of a thousand inhabitants in one week, while New York lost forty in the same period of time? Nearly nine thousand children, under five years of age, died in this city from the first of January of this year to the first of September. It is safe to say, without fear of contradiction, that a large proportion of these might have been saved had the laws of nature been properly studied and the lesson taught by these been properly applied. But look at the quarters of the poor of New York—and these are the greatest sufferers from sickness, and are an easy prey to the destroying influences under which they live and die—and you will find it natural that so many lose their lives prematurely.

The densely populated portions of our city on the east and west side, the sanitary condition of which is disgraceful, naturally suffer most, and hecatombs of innocent lives are slaughtered annually through ignorance partly and culpable neglect of duty of those authorities who are munificently paid for work which they should, but never do perform. The tenement houses and the miserable shanties which serve as human abodes in this city are too filthy and too badly constructed as not to cause disease and death. They are badly ventilated, lighted and heated; their drainage is defective, and the privies and gutters send through the sleeping and living apartments of the poor, effluvia and death-breeding

miasma, which few can withstand. It is enough for the casual observer to visit one of these pest houses and to observe the sunken eyes which stare at you from their caves; it is enough to see the flabby muscles, and their loosely, overhanging, dirty, yellowish, jaundiced and sunburnt skin, the red and inflamed eyelids, the infiltrated glandular swellings around the neck, to know that we have before us one of the inhabitants of the dirtier regions of our city. Look, on the contrary, at the well-to-do people who enjoy the refreshing sea or mountain air during the summer, and live in comfortable quarters in the winter, and you can at once predict that one generation of these will outlive two or three of those of the poorer classes. Is it to be wondered at that those of tender age should perish when overcome by the excessive heat during the summer months, living under such abominable anti-hygienic conditions?

It is the duty of the municipality to prevent over-crowding in the cities; it is its duty to pave the streets properly, to have them thoroughly cleaned, washed, and disinfected; it is its duty to see that all human and animal excrements be thoroughly removed by proper drainage and sewer connections. It is the duty of sanitary authorities to banish from the city limits slaughter-houses, fat-melting, sausage-making, and other obnoxious and highly injurious establishments, and have these transferred to the country. New York stands in great need of more honest officials, who will strictly carry out the laws; it stands in need of so-called rapid transit and means of transportation to and from the city. Instead of erecting costly edifices for the relief of the sick poor in the city, these should be erected in the country, within easy access to the city. Reception hospitals for the admission of the sick, where these could obtain the first medical aid, to be thence transferred to the permanent county hospital, would be all that is required in a city. Let the permanent houses of relief be erected in the future on the pavilion plan, on

the sea shore or a salubrious neighboring part of the country. What shall we say of the horrible pavement in some parts of our city! The so-called cobble-stones are irregularly shaped, and have interstices between them for the accumulation of filth and decaying animal and vegetable matter. There are blocks on Ninth and Tenth avenues, above Thirtieth street, and also in the lower parts of the city, east and west side, where I have seen large holes in the pavements extending for several feet, filled with stagnant pools of nauseous compounds, covered with green scums, and filling the atmosphere with health-destroying and pestilential gases. Add to all this the excessive heat from which every one who remains in the city is suffering during our summer months, and no one need be surprised at our great—especially infant—mortality.

The improper quality and quantity of food taken, the excesses committed in eating, drinking, the insufficient and inappropriate amount of clothing used, are additional reasons, no doubt, of epidemics which decimate the population of a large city. It is a wonder to me that no more people die prematurely under such circumstances. I have not taken into consideration the accidental deaths that figure up pretty high in our city. Ambition, sorrow, grief, disappointments in business, in love, all these often hasten their victims to that bourne whence no traveler ever returns. These latter causes are, however, an atom, a mite only to those that can be prevented. I allude to the horrible death-rate in this city, and its probable preventable causes, for this reason, in my letter. I think it is high time that our medical men should become the teachers of the people regarding sanitary measures; but, in order that the physician should be enabled to do his duty towards the community he lives in, he must himself be more of a hygienist than most of our physicians are to-day. I have looked over the prospectuses of several of our colleges, and I have not been

able in some of them to discover lectures on hygiene announced. In the laying out of towns, and even villages, the medical man should be consulted. He ought to be able to examine the salubrity of the climate of the place, to analyze the available water supply for drinking and cooking purposes. He should, in conjunction with the architect, measure and indicate the necessary air-space of each room and house, and the law should provide that such and such a house owner should be prohibited from letting his house to more persons than can safely inhabit the same. He should superintend the schools, public and private, and should examine, as has been suggested, the sight of school children, so that the near-sighted should not sit the most distant, and the far-sighted the nearest to the teacher, etc. It is for the country physician to instruct his people regarding drainage of undrained lands, and proper house-drainage, and all matters appertaining to cleanliness of persons and their dwellings. Cleanliness in every thing is one of the great preventives of disease. How few people, and perhaps physicians, know that the biting of their finger nails may cause them pain and discomfort for years, by introducing eggs of the cysticereus into their bodies, and cause tape-worms to develop, as I have had instances lately. How few physicians are to-day competent to examine human food, or diseased meat in especial! And few know, I fear, as Heller states in *Ziemssen's Cyclopedia*, that nearly half the population of Germany, for instance, are infested and suffering from worms. What amount of mischief is caused by the trichinæ, the cysticerci? The Greeks, says Heller, l. c., distinguished three sorts of worms only—the tape-worm, the round-worm, and the thread-worm, mentioned by Hippocrates and Aristides. The Romans only recognized two species—"Celsus and Pliny," broad and round-worms. It was not till more modern times, further says Heller, nor indeed till the present day, that more accurate information was acquired, as

regards the immense variety of forms. Of the animal parasites which take up their abode in man, and whose number is about fifty, twenty-one inhabit the intestinal canal. It is probable, however, that our knowledge in this respect is not yet complete, but rather that the number will be increased, as soon as those making observations are possessed of the necessary preliminary information. Of the twenty-one intestinal parasites, three are infusoria, nine belong to the tape-worm class, two to the suckorial, and seven to the round-worm class. Heller, who paid particular attention to the absence or presence of worms in 621 post mortem examinations, found them present in 291 cases, equal to 47.6 per cent. The above figures are below the truth, says Heller; some post mortems were made by inexperienced hands and eyes; further, in private houses, the intestines were, for other reasons, not at all opened, or the surroundings, especially with regard to light, were often most unfavorable; and single examples, especially of oxyuris, often escaped observation. The first condition necessary for the development of a parasite in the intestine, is, of course, the introduction of eggs, embryos, or of young forms. In the great majority, they are introduced with the food.

The degree of culture that people possess, and the habits and customs dependent on it, have a powerful influence. Cleanliness in general, and especially with regard to eating and drinking is the great preventive. Whole nations, which possess but little cultivation, suffer greatly from parasites of every description, so much so, indeed, that among them it is quite the exception to find any one who is quite free from them. Of much importance is the influence heat has in the development of the eggs of many species of worms. (See *Ziemssen's Cyclopaedia of Medicine*, vol. 7, Diseases of the Chylopoetic System.) I have dwelt at some length upon the necessity of establishing chairs for the teaching of public hygiene, which was the principal object in my mind in

detailing the frightful mortality taking place here among us through neglect of proper hygiene, and from some unavoidable causes, of course, not yet understood. Is it not proper for a journal like yours, to urge the importance of teaching public hygiene, not only in all our medical schools, but to rather do away with the useless teaching of anatomy, and physiology in our common public schools, and devote more time to the study of hygiene? Boards of health, it is true, have been created in several States in the Union, but these hold mostly, with a few exceptions, political sinecures, with good salaries, and the incumbents are often ignorant and dishonest. Meat and food inspectors in general, who know nothing about the microscope and chemistry, are a fraud upon the community where they exist.

I have only partly pointed out in this letter the many causes producing disease, and shortening human life. I am free to confess I have said very little that is new; but, alas! even if not new, it is very true. The truth must be told, since truth outlives everything else, and stands forever; it must be told, no matter how unsavory it may be to some persons to hear or read it.

The evil of over-crowding, improper food supply, and bad drainage, continue to cause disease and premature death, without the application of the proper remedies. Is it not high time that these questions should be fully brought to the attention of the medical world, and the public in general? I am sure of the good results that will follow the agitation of this question.

The first meeting of the New York Academy of Medicine was held on the 21st Sept., after its summer vacation, at No. 12 W. Thirty-first street, Dr. S. S. Purple in the chair. The different sections on surgery, medicine, gynæcology, obstetrics, etc., were called upon, but having held no meetings since the adjournment of the Academy, had nothing to re-

port. The Librarian acknowledged the receipt of many valuable books and periodicals.

The paper of the evening was read by Dr. Beverly Robinson, on "Endocarditis, Myocarditis, and Pericarditis, and the various Organic Diseases affecting the Heart." He showed the close connection existing between heart and lung disease, and claimed the great superiority of large doses of digitalis, in the treatment of these affections, in preference to either quinine, arsenic, phosphorus, veratrum viride, aconite, ice applications, or the alkalies, as given if dependent on a rheumatic diathesis.

Finally, I am compelled to report the death of Professor Crosby, of Bellevue Hospital Medical College, which occurred recently, and is lamented by all who knew him. Medical science has lost in him one of its most ardent devotees—one of its most zealous disciples and teachers. As you, Mr. Editor, were appointed to complete the course of surgical lectures which the departed Professor began at Dartmouth Medical College, in New Hampshire—which appointment I saw announced in the New York medical journals—you are, of course, fully familiar with the great loss we have sustained by the death of Dr. Crosby, although you may not have known him personally. All that is good and noble in man found an echo in his manly breast. A conscientious physician, a true friend, an excellent teacher, he was no doubt a devoted and self-sacrificing husband. May his memory live forever in the hearts of his professional brethren.

Truly yours,

Dr. RUDOLF TAUSZKY.

BOOK NOTICES.

NAPHEYS' THERAPEUTICS.—Already the edition of this work, which was published at the commencement of the present year, is *entirely exhausted*. No higher testimony to its worth could be given. It recommends itself at once to every physician who sees it. As was remarked by the *New York Medical Record*, "As a handbook of Therapeutics, pure and simple, it is invaluable to every practicing physician;" and the reason was well stated by the *American Medical Bi-Weekly*: "In no work can the practitioner learn so easily as in this one, the favorite medicines used in treating diseases, and the best methods of compounding them."

A new edition (the *fifth*) is in active preparation. The editor has been assisted by several very competent gentlemen in special departments, and the work has received a most thorough revision, and very large additions. Indeed, so extensive are the latter, that the two parts into which the work is divided, viz., 1, Medical Therapeutics, and 2, Surgical Therapeutics, will each make a volume by itself, quite as large as that which embraced both divisions in the last edition (about 600 pages). They will be printed on handsome tinted paper, in the best style, and each part, as wholly independent, will be sold separately if desired.

Original in design, and carried out with vast research, this work may justly claim precedence in real, practical, everyday value, over any others ever issued by the American Medical Press.

The following works have been received, but we regret that want of space prevents our giving them proper attention in this number. We shall try in our next issue to give our readers a just idea of their merits.

LECTURES ON PRACTICAL SURGERY. By H. H. Toland, M.D., Professor of the Principles and Practice of Surgery and Clinical Surgery in the Medical Department of the University of California. Philadelphia: Lindsay & Blakiston.

THE EAR: ITS ANATOMY, PHYSIOLOGY, AND DISEASES. A Practical Treatise for the use of Medical Students and Practitioners. By Charles H. Burnett, A.M., M.D. Philadelphia: Henry C. Lea.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Volume I, for the year 1876. Boston: Published by H. O. Houghton & Co.

AN INDEX OF DISEASES AND THEIR TREATMENT. By Thomas Hawkes Tanner, M.D., F.L.S. Second edition, reviewed by W. H. Broadbent, M.D. Philadelphia: Lindsay & Blakiston.

THE PRACTITIONER'S REFERENCE BOOK; adapted to the use of the Physician, the Pharmacist, and the Student. By Richard J. Dunglison, M.D. Philadelphia: Lindsay & Blakiston.

FAT AND BLOOD, AND HOW TO MAKE THEM. By S. Weir Mitchell, M.D. Philadelphia: J. B. Lippincott & Co.

NURSE AND PATIENT, AND CAMP CURE. By S. Weir Mitchell, M.D. Philadelphia: J. B. Lippincott & Co.

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New Series.

ORIGINAL COMMUNICATIONS.

ART. I.—*Doctors and Drink.* Extracts from a paper read before the Union District Medical Association. By D. MILLIKIN, M.D., Hamilton, Ohio. Published by request of the Association.

Mr. President and Gentlemen: I think I may truthfully say that the imperfect thoughts which I am about to present to you have forced themselves upon me. Had it not been so, I would hardly have taken up a subject, the mere mention of which, sad to say, arouses in most men passionate, quick prejudices, rather than calm and philosophic interest—a subject which, here and elsewhere, has, even in recent times, arrayed party against party, church against church, race against race, and almost sex against sex, insomuch that we were once ready to declare that alcohol maddened those who used it and abused it, and those who totally abstained. And yet, since the subject is one of so great importance, and belongs to our profession, I gladly risk the *odium theologicum* and the *odium alcoholicum* in an endeavor to learn a little more than the little we know of the laws of drunkenness—laws of great importance to mankind, and to every man that loves his kind. * * * * *

There is a theory of the origin of drunkenness with which I make an early and a hearty quarrel, not so much because I deem it essentially false, as because I know it is an inadequate expression of the etiology and pathology of this

affection or habit. This insufficient theory, beginning with the premises that the heart is deceitful above all things, and desperately wicked, concludes that drunkenness is simply a form of wickedness, nothing more, nothing less. I have no doubt that you will agree that a theory which makes inebriety merely an outbreak of depravity, gives the physician no clue to a rational prophylaxis, or a proper treatment. Worst of all, the mind that is preoccupied with this theological theory of the causation of drunkenness seeks logically for some mode of cure known to theology; and, relying on sermons and prayers, neglects what I may be permitted to say, are more efficient curative agents. We will lose nothing if we pass lightly by another popular theory, notable chiefly for its inaccuracy, which asserts virtually that all men are prone to drunkenness, all alike are drunkards *in posse*, though some are diverted from the natural destiny of all by laws which make alcoholic beverages more or less inaccessible, by fortunate early training, by the pledge-book, and, in fine, by circumstances. * * * *

Drunkenness, I take it, is made up of two factors, or let us rather say, has two main roots: First—*The appetite for the specific poison*; and, second—*A will too weak to resist the appetite*. This simple statement leads us into deeper waters. For the alcoholic appetite is not a simple physical lust, as many suppose, but is itself complex, made up of a physical desire, and I may say chiefly of a mental desire.

It will be asked of me, I know, how it can be true that the mind craves alcohol when nothing can be more irrational than intemperate indulgence. Let me see about this. It is everywhere granted that after a long season of inebriety, man's mental part craves alcohol to deaden remorse, to quiet dissatisfaction with self, and to obtain rest from just reproaches of friends. Now, I ask you to remember, what we too often forget, that the world is full of men and women as miserable and as uneasy in their minds as the average

drunkard. Great hopes long deferred have made the heart sick; shafts well aimed have been blown aside; confident, exultant pride has brought a fall. Besides, people who are, as we say, unlucky, and hence, wretched, there are many miserably melancholy persons and families who are from birth more or less devoid of hopes, of ambition, and are incapable of any great happiness. These are born to gloom; they suffer not so much from the accidents of life, as from a congenital vice. Now, the point I would enforce is, that the drunkard's remorse is merely a variety of unrest and misery; and, barring the fact that a drunkard's physical man, once taught to drink, demands drink; there is the same reason, *i. e.*, the same mental anguish, for a miserable man's commencing drunkenness that there is for an inebriate's continued drunkenness.

To one who is contented, and happy, and temperate, this may seem a poor excuse for that wreck of body and soul which presents itself to the mind's eye when we hear the hard name of *sot*. But I believe it is the prime motor in most cases of drunkenness, and a powerful accessory in the rarer cases, which begin by a physical lust. I have sometimes thought that the public understood this matter far better than we. When a man in our community is jilted in love, or unhappily married, or widowed, or bankrupted, or discharged from good employment, or acquires a hopeless disease, Mrs. Grundy closely watches that man to see if he will not take to drink. And why? Because, whatever else alcohol can do, it certainly can gratify for a time the tired soul's longing for rest.

Am I speaking in incomprehensible terms when I speak of this longing for rest? Sir, it is the aspiration which moves every man of thirty years to wish, at some time, that he were out of the world and done with its worry. It is the aspiration which at this moment is religiously cherished by one-fourth of our race, who wait and strive only to be worthy of absorption into that Buddha who sits throughout eternity

meditating on all things but himself, and happy in perfect lack of self-consciousness. It is this aspiration which leads men to suicide, and which Tom. Hood has fixed for all time in six reckless words.

"Anywhere, anywhere out of the world!"

It is this aspiration which Hamlet breathes in the familiar soliloquy, wherein he declares the sleep of death a consummation devoutly to be wished, if only that sleep be dreamless.

Now, you will agree with me that a drunken man is, for the time, not his proper self. He may be a maudlin fool, but he is out of himself, and is no more capable of mental anguish and unrest, than one under anæsthesia is capable of physical pain. Unthinking persons note the vast number of dissipated lives that end in suicide, and at once suspect some casual relation between drunkenness and suicide. Doubtless there is such a relation in certain cases; doubtless suicide is the natural end of a subject demented by long alcoholism. But I see a close relation; drunkenness and suicide are twin errors, growing out of this determination to change one's surroundings, or to be rid of self at whatever cost. Many a poor wretch has exhausted the nepenthean virtues of alcohol to find them all too feeble for his desperate case, and turns to suicide as the sole remaining alternative. Suicide is only a deeper draught of that oblivion which the miserable man seeks and finds in the bottle. * * *

Having said so much of the mental causes of drunkenness, it is in order now to consider the alcoholic appetite in its physical origin. And under this head we note first that the craving for alcohol descends by inheritance. The simplest form of inheritance is that of descent from parent to child. We should remember, however, that hereditary transmission often comes from a remote ancestor, and merely *through* an immediate progenitor. Stock-breeders, who carefully observe many more generations of domestic animals than the oldest

physician can ever observe in the human species, have confirmed the same law. We should, therefore, not be surprised to see drunkenness descend through a generation, perhaps through several generations, in a dormant state, to explode unexpectedly upon the offspring of temperate persons.

The meddling with alcoholic liquors is another source of the appetite for alcohol. In most parts of christendom every one is required to drink more or less by the usages of polite society, and how powerful these customs are I need not say. Many youths who are not tempted to drink by any appetite, nevertheless cultivate habits of tippling, under the impression that perfect sobriety is not a sign of manhood. The great army of men engaged in the manufacture and sale of liquors are required to drink more or less by the very nature of their vocation. Now, I would not pretend to say that all who thus meddle with drink must inevitably take to hard drinking; but I do believe that many persons who were not born to be drunkards, contract the alcoholic habit by moderate drinking; and I do believe that others, having the alcoholic propensity dormant in their constitutions, arouse the slumbering devil by slight indulgence.

It has been plausibly intimated that diet has an influence on the very beginning of the craving for alcohol. It is very certain that the carnivorous races are cursed with the most powerful drink mania. I may mention our American Indians, the Cossacks, and the Guachoes of South America. Conversely it may be noted that neither the blubber-eating Esquimaux, nor the rice-eating people of India and China, are inclined to abuse alcohol. This subject of the relation of diet to drunkenness, is one that merits our attention, though as yet, the theory which asserts a close connection between a nitrogenous diet and the alcoholic frenzy is a pure theory. I submit the matter as one of the possible physical causes of drunkenness.

We have seen that mental disquietude, from whatever

cause arising, tempts the sufferer to resort to some agent which shall rid him of himself, and alcohol, owing to its cheapness and association with conviviality, is the most popular of all the drugs that have this power. We have seen also, that the alcoholic mania is transmitted from parent to child, and that the propensity is sometimes transmitted undeveloped, encysted as it were, through one or two generations, to be developed in a third or fourth generation. It now remains to discuss the second factor of drunkenness mentioned in the beginning, namely, a feeble mind.

* * * * * *

Small self-control under the stress of internal and external temptation is, I take it, to blame for the fall of most drunkards. As a general thing they yield quickly either because of a congenital deficiency, or, too often, because of a deficiency acquired through a bad education. This defect, permit me to say, is the more dangerous since it is scarcely recognized by men outside of our profession. In fact it was not until recent times that forms of mental deficiency and disease affecting the volition were admitted, and it is quite recently that they have been studied. The lawyers absurdly claim that every man who can perceive right and wrong, can choose between right and wrong, and the very possibility of a feeble or sick will, is laughed out of court.

Just here there presents itself a truth bearing at once on the etiology and treatment of dipsomania. There is no agent known, excepting perhaps opium, that will so quickly as alcohol diminish the mind's power of directing its own operations. This is tantamount to saying that alcohol has the power of taking away man's manliness, for, surely, if our mental operations are clearly distinguishable in kind, from the mental operations of the lower animals, it is by our remarkable and unique power of confining thought within bounds, and of projecting it in predetermined directions.

The mind, under the influence of alcohol, is deprived of

this self-controlling power, and is free to follow automatically and inertly in lines of thought, or emotion, or volition, which external sensations or the suggestions of others may indicate. It is skillfully administered by gamblers to their victims, not alone to confuse the mind, but to diminish the power of self-control. With the same object in view it is used by harlots upon their patrons, and very wisely, for nearly all the wretched girls who recruit the bawdy-houses, make their first mis-step when well filled with wine—and such wine! Nay, it is used by men upon themselves, when they wish to go automatically through a performance which they can not accomplish with their faculties all awake. It is not many years since a desperado in Columbus, Ohio, conceived the idea of climbing in the rear end of a wagon, to murder and rob a farmer returning from market. He not only perfected his plan in all its details, but actually climbed into the wagon, and then found that he could not force himself to use the hammer which his horrible forethought had provided to crush his victim's skull. Knowing experimentally the power of alcohol to quiet his better part, he fortified himself with heavier draughts of whiskey on a subsequent market day, and performed the murder in all its hideous details, as he had planned it. In his testimony he conveyed the idea which we are now entertaining, that alcohol has the power of degrading man to the condition of an executive sentient machine. More instances illustrative of the principle that alcohol diminishes the mind's self-watching and self-controlling powers, would lead us too far from the present line of discourse. The annals of crime abound with them. It is my present object to press this one thought: Given a subject with the alcoholic propensity and just enough power of will to control himself, a brief indulgence in alcoholic drinks is excessively dangerous, since it directly diminishes that subject's self-control. Alcohol strikes the best weapon from the hand of such a man, and leaves him an unarmed and

passive victim of the thirst which he has hitherto overmastered and repelled.

Before passing on to discuss the treatment of dipsomania, it will be profitable to point out its relations to other diseases. To be brief and general, this malady is correlated with all the neuroses as all the neuroses are correlated with each other. We would naturally expect to find the mania for drink in families afflicted with hysteria, for hysteria implies always a loss of self-control. We look also to find drunkenness prevailing in families that have a taint of insanity—a fact inexplicable unless we admit that drunkenness is to a great extent a mental malady, and therefore to be found in some sort of close relationship with other forms of mental disease. Looking farther we come upon a group of diseases very closely allied to insanity, and, as I believe, to drunkenness. The subjects of these diseases are persons of marked eccentricity, precocious children, geniuses whose minds run in some one direction, apparently without internal guidance, and, lastly, monomaniacs of every sort, whose name is legion—misers, spendthrifts, religious enthusiasts, kleptomaniacs, homicidal and suicidal maniacs and erotomaniacs. A group of neuroses remote from these strictly mental affections is made up of neuralgia, epilepsy and catalepsy, which are all akin to insanity and to dipsomania. Some would connect asthma and spasmodic colic with these other neuroses, and, silent as are the great written authorities on this head, this is matter calling for our study. Since my attention has been directed to the connection between drunkenness and asthma, I have seen and have recalled a surprising number of families wherein the offspring of asthmatic parents have given evidence of a great tendency to the vice of drinking.

Now, I would very poorly impart my meaning if I were to seem to say that all drunkards, or most drunkards, will be found to be afflicted with one of these neuroses.

What I desire rather to say is that these, and probably others,

are allied to dipsomania, and spring from one and the same constitutional defect. I look therefore through the abundant clinical records of the books, and review the list of my acquaintances, with an expectation of observing the descent of this neurotic defect, greatly modified, from generation to generation. This expectation is not disappointed. More surely than consumption, more surely than syphilis, more surely than cancer or scrofula, the mal-organization from which are bred these mental and nervous diseases, is handed down from the afflicted to their posterity. * * *

We might almost embody the whole treatment of drunkenness in a quotation from Dr. Holmes. He admits the correctness of the popular notion that the doctor can cure anything if he is called in time, but, he says, the doctor is generally called about two hundred years too late! Yet something can be done for the cure of the inebriate as we find him.

While seeking the causes of drunkenness we have already found some indications for treatment, and these we will briefly recapitulate while presenting others.

But, first, let us understand what we can not do. We can not remove drunkenness from the face of the earth. Your attention has been earnestly directed to the fact that it is a vice springing from physical and mental defects apt to be acquired, apt to be inherited, and hard to be compensated or corrected.

I have argued also that drunkenness grows out of certain purely mental causes which induce melancholy and discontent, and some of these causes of mental distress are fixed upon us by the very conditions of life. I submit then, that so long as these defects in human constitution endure, and so long as the physical and mental conditions of the alcoholic habit arise, drunkenness will continue. There is, moreover, growing in the great cities a class of men, the so-called criminal class, cursed with all the nervous maladies we have

enumerated, and almost always addicted to drink. The caste of these people is as immutable as the Gypsies'. They live among us, but are as inaccessible as the tribes that drink from the fountains of Herodotus. They seem to be of us, but they are as incorrigible as the Sioux. So fast as civilization, and refinement prevail, as surely they will prevail over the earth bringing prosperity in their train, so fast the great cities will grow greater and more numerous, and this incorrigible and inaccessible class will greatly multiply and forever recruit the army of drunkards. The hope of "blotting drunkenness from the face of the earth," which we often hear expressed in the pulpit and even in medical societies, is a hope not based upon any study of the natural history of the human species; it is a hope to be realized only when all human defects and diseases shall be blotted from the earth.

* * * * *

Turning to a discussion of the possibilities of treatment, we remark, upon the physical appetite for alcohol, that it notoriously grows by what it feeds upon. Not upon any fine-spun theoretical grounds, but on the testimony of many inebriates we are able to assert that the first step in treatment, is the complete withdrawal of alcohol from the patient. A slight indulgence, even a few drachms daily of some alcoholic medicine, given with the best intentions, may be enough to keep the craving alive. We have already developed another truth sufficient of itself to insure the total abstinence of the drunkard who would reform; he can do nothing unless his will is acting with great intensity, and the influence of alcohol is to directly paralyze the volition. It is, therefore, let us repeat, all important that the inebriate should be induced to abstain, and some means of compelling abstinence, which might be objectionable on general principles, are yet justifiable on the ground that the patient can not voluntarily abstain, nor even try to abstain, until the alcohol has been eliminated from his system.

Alcohol damages chiefly the nervous centers, and when it is withdrawn suddenly, the signs of deranged health point chiefly to those centers. They must therefore be supported by food and tonics until the crisis is past. The choice of medicines lies between the nerve tonics; but sedatives, even the narcotics, may be needed to carry the patient over the first few weeks of his sober life. There is, in my mind, no fear that strictly medical attendance will be neglected by the average physician; it is likely to be done and overdone. But there is good reason to fear that the proper mental and moral influences will not be so promptly and skillfully employed, for it must be confessed that neither the public nor the profession appreciate the *materia psychologica* as highly as the *materia medica*.

The great work to be accomplished by our mental therapeutics is the stimulation of the will, and the removal of the melancholy or more acute mental distress, which we have at some length remarked upon as a cause of drunkenness. We can reach the will by way of the intellect and the emotions, but the appeal to the inebriate's intellect may well be omitted. Be he never so low he knows the depth of his degradation, and the great bulk of temperance addresses, designed as they are to convince men of the greater excellence of temperance, are merely arguments to prove what no person (certainly no drunkard,) would ever think of denying. It is eminently proper to operate upon the drunkard's emotions. Since intemperance brings disgrace or ruin on the patient's family or friends, his love for these may be invoked to induce him to reform. If self-respect be not entirely dead, it must be aroused if possible. And here it may be well to say that the most successful appeals to self-respect are not the loudest. There is a more delicate vehicle than speech for the conveyance of our wishes. The patient may be experimentally treated, not as the man he is, but as the man he was in better days. Affection may devise some business for the unfor-

fortunate patient, not necessarily of any great importance, but yet such as would not ordinarily be entrusted to one hopelessly fallen. And one's very mode of address may be made to convey to the patient the hope that he is not yet beyond hope, that he is well worth saving, and that there is the making of a man and a gentleman in him yet. I would be the last man in the world to encourage the marriage of an inebriate, and I shall ever do all that I can to promulgate the truth that such a union is an audacious tempting of providence, almost certain to result in the ruin of an innocent and ignorant woman. But the occasional cases in which a devoted woman's love stimulates all that is good in an inebriate, arouses his slumbering manliness, and saves him triumphantly, should teach us the great value of an atmosphere of hopeful affection and respect. So rarely does this beautiful, romantic, and to me, thrilling spectacle end in success, that we may not hope for a large proportion of cures, when we can only employ means similar and never equal to those of the devoted young wife. But the fact remains for us that the inebriate is, even more than most men, inclined to value himself at the appraisalment of others, better men, and that his self respect is greatly at the mercy of others.

On all accounts travel is desirable for the inebriate. It harmlessly gratifies the restlessness that belongs to the neurotic type: it engages the mind without causing fatigue: it furnishes an excellent opportunity to run away from evil associates and associations. At the same time, if the route and the travelling companion are judiciously chosen, abstinence from alcoholic drinks may be secured without rudeness. Among strangers the inebriate is treated with courtesy, and may learn to treat himself well. Other men find in travel the inspiration to return to duty at home with quickened energies, and there is some reason to hope that the inebriate, after the diversions of travel, may perhaps return recreated in the highest sense.

I hope I may say without offense that religious feeling may rightly be cultivated by the physician in the person of his inebriate patient. Under strong religious feelings the desire to reform may spring up, or a long-cherished desire acquires for the first time an intensity sufficient to carry the drunkard through the hard beginnings of reform. And here is no marvel. There is no religion that fails to teach that drunkenness is a sin. There is no living religion that does not assure the drunkard he may be saved, and is well worth the saving. There is no religion that does not include temperance among its choicest virtues, nor that does not denounce future woe, or negative unhappiness upon immoral present life, and though to purer souls these threats are of little significance, they often affect the drunkard's mind with terrible force.

And now, finally, seeing how many men are driven to drink by mental distress, unrest, or anguish, we may lay it down as a principle of treatment that everything that can annoy, harass, and perplex the patient should be removed if possible. The ordinary perplexities of "business" should be averted by friends. If there is a scolding wife at home she must be dealt with, but the tongue, alas, can no man tame. Disappointments must be healed. New and congenial pursuits may need to be suggested. In every case, and more especially in those cases where drunkenness has sprung out of life-long idleness, it is important that the patient should be provided with regular, honorable employment, either for bread or for fame. I would greatly trespass on your time and attempt a difficult task if I were to try to estimate the potency of good temper, good manners, and good books in arousing the dormant manliness and gentlemanliness which we may charitably hope to discover in the lowest sot. I leave the whole subject of the mental and moral treatment of drunkenness with the remark that it acquires a double value when pressed by the physician, who may often-

times need, not merely to supervise, but absolutely to invent and commence such treatment. Familiar truths such as I have been urging upon your attention are not familiar to the laity, and they come with great force when they come fresh from the family physician, who is supposed to advise as one who deals with life and death.

Recapitulating, then, we may say that this is the whole treatment of drunkenness: Abstinence from alcohol, support for damaged nerve-centres, the best possible nutrition for the whole body, stimulation of the will by operating on the intellect and the emotions, the removal of mental distress of every grade, and the maintenance of a sweet and wholesome moral atmosphere about the patient.

Treatment will fail in most cases. We must labor with fifty to save one. The morbid physical organism that craves alcohol, the morbid mind that solicits its dangerous sedation, the feeble will that soon surrenders to this double temptation—these are, for the most part, defects of constitution which we can rarely and hardly correct. As a rule, it is too late to reconstruct the organism of an individual so defective, when he has passed puberty, and has become addicted to drink.

Another reason why we must look with poor hopes upon the drunkard's future is in the fact that nothing can be done for him without his consent and active coöperation. He must actively strive to be free, and, unfortunately, by birth, or by the influence of alcohol, he has been deprived of the very power of striving. We have, then, good reason for a bad prognosis.

* * * * *

Though called two hundred years too late for the drunkards of our generation, we can do much for the drunkards of the rising generation, and even more for drunkards yet unbegotten. The great prophylactic which I would recommend is education—education of the public and of the classes sus-

ceptible to drunkenness. I would have a wonderfully lecture-ridden and ignorant public know that to successfully oppose alcoholic intemperance, it must also attack and suppress a great group of nervous diseases. I would have the public know that uncultivated minds, undeveloped wills, and uncontrolled emotions are directly related to drunkenness. I would have young men and maidens, yes, and parents, taught that marriage into families of "nervous" people is dangerous, and that the neurotic taint which has a comparatively innocent manifestation in this generation, may manifest itself in hysteria, insanity, dipsomania, and a hundred other maladies in the next generation. It has been said with some propriety that marriage between young persons bent on marriage can so rarely be prevented that it is better for the physician to withhold his protest always, lest his influence should be overstrained. I believe, however, that young persons, and especially young women, will not be inclined either to marry with, nor to yield their affection to, those whom they have learned to regard as mental and moral cripples. I believe that young people can be so instructed as to observe family traits, and to make an intelligent estimate of the danger to him, or to her, who marries into a family afflicted with the neurotic taint. I would not pretend that such knowledge should change a pure love already grown, but I do think it would greatly tend to prevent the very beginnings of affection where marriage promises to be a calamity. Let me mention the young women again with a confidence which I hope is not extravagant: I believe that when they have learned to perceive moral and mental deformity, they will bestow upon it infinitely tender pity, but not wifely love.

We may hope, also, that when there is more general knowledge of the susceptibility of certain men, they will not be recklessly invited and forced to drink, as is now the custom.

I trust, also, that when the public mind is directed to this matter, it will perceive that unusual wilfulness, and the

other childish manifestations of a weak, self-controlling power, are not merely disagreeable tricks in children of the neurotic class, but are the infallible signs of a dangerous mental infirmity which ought to be corrected and counter-balanced by education during infancy and early youth, when only they can be corrected.

Here, sir, I rest. I would gladly go further into a discussion of the great efficacy of education of the public by our profession and of susceptible classes. It was, in truth, the subject which I set out to elaborate, but I have been so long delayed by preliminary and collateral matters, that we must pause where we would have begun. I may plead, in extenuation, that we have passed by topics of the highest interest. We have not touched the question whether alcoholic drinks should be banished from society, nor the associated question whether, by the cheapness and abundance of mild alcoholic beverages, the public may become accustomed to their use, and learn to use them with moderation. We have passed, also, an important question, which was mooted at a recent meeting of this Association, whether dipsomania can be best treated in asylums; and, if so, whether the State should found and control them. The merits and demerits of alcohol as food, as medicine, and as poison, we have not touched upon. He who approaches the subject of alcohol, or alcoholism, finds himself embarrassed by the great number of topics which must be temporarily laid aside for future meditation and discussion.

ART. II.—*Evidence and Conclusions on the Antagonism of Belladonna and Opium.* By E. S. RICKETS, M.D.

From poisonous doses of opium the following symptoms are usually observed within a short time: giddiness, insensibility, and immobility, respiration scarcely perceptible, and a small, feeble pulse, which, sometimes, becomes full and slow. The eyes are shut, and pupils contracted, and the

whole expression of the countenance is that of deep and perfect repose. As the effects increase, the lethargic state becomes more profound, deglutition is suspended, the breathing occasionally stertorous, the pupils are insensible to the application of light, the countenance is pale and cadaverous, and the muscles of the limbs and trunk are in a state of relaxation; vomiting sometimes supervenes, and there is an occasional glimpse of returning animation, but the comatose state soon returns, and death, which is sometimes preceded by convulsions, rapidly follows. (Dr. Beck.) After a large dose of belladonna, the face becomes flushed, the eye bright, dry, and injected, the pupil dilated, the sight dim and hazy, while the power of accommodation in the eye for distance is lost. The mind and senses are peculiarly affected; the ideas, at first rapid and connected, become incoherent and extravagant; there is often decided delirium, with pleasing illusions. Sometimes the patient is possessed with constant restlessness, keeps continually moving, and cannot be quieted. A kind of somnambulism is occasionally observed. Thus cases are recorded where, under the influence of belladonna, the patient, for a long time, performed the movements customary to his occupation. The delirium may be furious and dangerous. Atropia excites the cord and heightens reflex action, paralyzing both the terminations and the trunk of motor nerves. (Ringer.)

Dr. Wm. F. Norris (*Am. Jour. Med. Sci.*, Oct., 1862) publishes a list of cases of belladonna poisoning, treated with opium; also, opium poisoning, treated with belladonna. (22.) He says: "In regard to the foregoing cases, they seem conclusively to show that, in opium poisoning, belladonna, in doses which, in a state of health, would certainly poison, may be administered with impunity, and be followed by a rapid subsidence of the symptoms produced by the exhibition of the former drug; and, *vice versa*, that opium rapidly and safely counter-

acts the poisonous influence of belladonna. The treatment above indicated has, indeed, in some cases failed, and this may prove that they are not mutually antagonistic; but, even in these fatal cases (which are few), we may sometimes see a partial amelioration of the symptoms, and it is well worthy of inquiry, how much, in these instances, the relative quantities of the two drugs administered, the stage of poisoning in which the patient was first seen, the age and constitution may have contributed to the result. Thus adding, 'the mode of action of these drugs on the nervous system is not well understood.'"

Drs. Mitchell, Keen, and Morehouse say, after experimenting:

It thus appears that the influence of atropia on the pulse and respiration is in no way altered by the full use of doses of morphia; so that in this particular their supposed antagonism does not exist. They think their experiments authorize them to draw the following conclusions as to the antagonism of atropia and morphia:

1. Conia, and atropia have no power to lessen pain when used hypodermically.

2. Morphia, thus used, is of the utmost value to relieve pain, and is most potent, in certain forms of neuralgia, the nearer it is applied to the seat of suffering.

3. Morphia lowers the pulse slightly or not at all, atropia usually lowers it a few beats within ten minutes, and then raises it twenty to fifty beats within an hour. The pulse finally falls about the tenth hour below the normal number, and regains its healthy rate within twenty-four hours.

4. Morphia has no power to prevent atropia from thus influencing the pulse, so that, as regards the circulation, they do not counteract one another.

5. During the change of the pulse under atropia, the number of respirations is hardly altered at all.

6. As regards the eye, the two agents in question are mutually antagonistic, but atropia continues to act for a much longer time than morphia.

7. The cerebral symptoms caused by either drug are, to great extent, capable of being overcome by the other, but owing to different rates at

which they move to affect the system, it is not easy to obtain a perfect balance of effects, and this is made the more difficult from the fact already mentioned, that atropia has the greater duration of toxic activity.

8. The dry mouth of atropia is not made less by the coincident or precedent use of morphia; atropia does not constipate, and may even relax the bowels.

9. The nausea of morphia is not antagonized or prevented by atropia.

10. Both agents cause dysuria in certain cases, nor is the dysuria occasioned by the one agent relieved by the other.

11. Atropia has no ability to alter or lessen the energy with which morphia acts to diminish sensibility or relieve pain of neuralgic disease.

12. As regards toxical effects upon the cerebral organs, the two agents are mutually antagonistic, but this antagonism does not prevail throughout the whole range of their influence, so that, in some respects, they do not counteract one another, while as concerns one organ, the bladder, both seem to affect in it a similar way.

Dr. S. W. Gross (*Am. Jour. Med. Sci.*, Oct., 1869) speaks of a lady who took three grains of atropia. Three hours after symptoms of poisoning had set in, one-half grain of acetate of morphia was thrown in under the skin. The apparent effect was to relieve the trismus. In fifteen minutes half a grain of sulphate of morphia was injected. This brought down the respirations from twenty-six to twenty, but produced slight stertor, and effected no change in the pulse. After the lapse of an additional fifteen minutes—the respiration in the meanwhile having been irregular and feeble—another half grain was used. In fifteen minutes, the pulse was reduced two beats. The respiration was fourteen, and very decidedly stertorous; and the bad breathing continued for half an hour after the vigorous use of artificial respiration and faradism. A grain and a half of morphia, therefore, used hypodermically during the space of half an hour, merely intensified the poisonous effects of the atropia, and still further jeopardized life.

Dr. Geo. Harley (*Brit. Med. Jour.*, April, 1868), endeavors, by the recital of numerous experiments upon the horse and dog, as well as some on man, to prove “that opium and bel-

ladonna have not the antagonistic action which has been attributed to them," but, when used in combination, they increase the narcotic effects of each other. He gives four cases as proof. In the first, he injected one-fourth of a grain of sulphate of morphia in the arm; in the second, he injected one-fourth of a grain of sulphate of atropia—in each instance, the drug used producing its characteristic effects, except that the hypnotic effect of the morphia was incomplete. In the third, he injected one-fourth grain of the acetate of morphia, one hour after the injection of the one-fourth grain of sulphate atropia, claiming that it paralyzed the belladonna effects very considerably, also greatly increasing the narcotic effect of the opium. In the fourth, he repeated the experiment with the same result.

Dr. Corona says, with regard to the result of experiments on the alleged antagonism of atropia and morphia:

1. Morphia was always capable, even in very small doses, of removing the symptoms produced by atropia, and of producing sleep.

2. During morphia sleep, very large doses of atropia did not, in the least, alter the symptoms due to morphia, nor was the sleep ever found to cease.

3. When atropia was injected in small doses, at intervals of ten minutes, although the total quantity was large, its action was more rapidly extinguished by small doses of morphia, than when atropia was injected in a dose of not less than twenty centigrammes.

4. The injection of the two poisons into the veins showed that a much smaller dose was sufficient to produce rapid and grave poisoning; but, even then, the morphia produced its action instantaneously, and its symptoms always superseded those of atropia.

5. The injection into the veins of large doses of atropia, and very small doses of morphia, was always followed by sleep, and the manifestations of the symptoms due to atro-

pia, appeared in intensity proportionate to the largeness of the dose administered for the purpose of counteracting the symptoms due to morphia.

From these results, Dr. Corona concludes that a partial physiological antagonism may be recognized, but that the idea of a mutual antagonism, therapeutically, cannot be accepted.

The recent Edinburgh Committee, presided over by the lamented Dr. J. Hughes Bennett, concluded—

1. That sulphate of atropia is, within a limited range, physiologically antagonistic to meconate of morphia.

2. Meconate of morphia does not act antidotally after a large dose of atropia; thus, while atropia is an antidote to morphia, morphia is not an antidote to atropia.

3. Meconate of morphia does not antagonize the effect of atropia on the branches of the vagi supplied to the heart.

Both agents in question destroy life in the same manner. Opium is more antagonistic to belladonna, than belladonna is to opium. In opium poison, treated by belladonna, it should be suspended so soon as the pupil begins to dilate, for, after this, it intensifies the action of the opium. In the majority of reported cases of opium poisoning, treated by belladonna, the reporter acknowledges that either copious emesis, free stimulation, or faradism had been resorted to along with the belladonna.

ART. III.—*On the Prevention of Puerperal Eclampsia by Chloral*. By H. G. LANDIS, A.M., M.D., Professor of Obstetrics in Starling Medical College, Columbus, Ohio. Read before the Columbus Academy of Medicine.

Modern therapeutics require more than the empirical and clinical endorsement of a drug to entitle it to credit. Almost every drug has been used in every disease, and the physician who has reasoned himself into a belief of the efficacy of a particular mode of treatment, is loath to change it for a new plan recommended merely by the experience of

others. He demands some rational and probable account of its *modus operandi* to persuade him of its utility. In the present instance, therefore, it is necessary to speak, first, of the nature of the disease, in order to judge logically of its remedy; and we will confine our attention more particularly to the form of eclampsia which occurs during labor.

From the frequent association of eclampsia with albuminuria, the conclusion has been jumped at that uræmia is the exciting cause of the former. This, in turn, has been associated with pressure upon the kidneys, which derives probability from its greater frequency in primiparæ. Thus,* in 50,928 cases of labor occurring in Dublin, there were 138 cases, 79 per cent. of which were in primiparæ, and in 90 per cent. albuminuria was present. Barnes reasons more cautiously. He states that pregnancy and labor require for their due fulfillment an extraordinary supply of nerve force, which implies a corresponding organic development of the spinal cord. This is accompanied by an augmented irritability of the nerve centers. There are also blood changes entailed which increase this. "When the blood change is marked by albuminuria, a poisonous action of peculiar intensity is exerted upon the nerve center, tending to produce eclampsia." This is non-committal as to the precise nature of the poison. That it is not due to uræmia, is made clear by an important fact. In uræmia there is a marked fall of temperature. In a case observed by Hanot,† the temperature fell from 34° C. to 30° C. in one day, and to 20° C. just before death. In the eclampsia of labor, the reverse obtains, a temperature of 109° having been observed.‡ And this brings us to our first indication for a remedy to reduce temperature. The poisoning of the blood is, in all probability, not due to any specially deleterious substance, but to the hydræmia which is associated with the albuminuria. But,

* S. C. Busey, *Phil. Med. Times*, Aug. 5, 1876.

† *Phil. Med. Times*, Feb. 2, 1873.

‡ S. C. Busey, *op. cit.*

on this point, it would be wise to await better observed facts, than to evolve further theories without any substantial basis. The distribution of the blood is a matter of as much or more importance than its quality. Two opposite conclusions on this point contend for credibility. As a specimen of the one side, Dr. Carson* may be cited. In a learned article on the subject he records two cases occurring, the one while the head was at the perineum, the other after delivery. In neither were there any premonitory symptoms. He states that in both cases there was an *anæmic* condition of the nerve centers. But he also quotes Denman as denying any cerebral fullness in this condition. Now, if the cases were not more accurately observed than the writings of Denman, the anæmic theory is in danger from this witness. Denman states (page 518): "In the examination of many women who have died in convulsions, I have never seen an instance of effusion of blood in the brain, though the vessels were *extremely turgid*;" and in speaking of the treatment, he recommends that when the head is particularly affected we should add to general venesection from the arm, a lancet opening of the jugular vein or temporal artery, which would indeed be remarkable treatment for an anæmic condition of the nerve centers. Marshall Hall states that puerperal eclampsia resembles epilepsy, and Trousseau sees no *difference* in them. *Per contra*, Dr. John S. Parry, after a careful study of the subject, comes to these conclusions†: 1st. That epileptics rarely have convulsions in labor, and, (2d), that they are not more liable than others to have them. It is scarcely necessary to mention the authorities who record their belief in the existence of cerebral hyperæmia in this affection. The clinical history of the affection should be sufficient. A case will illustrate this point: B. M., æt. 26, primiparæ; six years married; short, stout, and plethoric; fell in labor July 25th. The membranes ruptured with the first pain, at 1:30

* Phila. Med. Times, Nov. 15, 1871.

† P. M. T., Nov. 27, 1875.

P.M. Nothing of note occurred till about 11:30 P.M., when the head was engaging easily in the inferior strait. By this time she had become fidgety, bore her pains ill, and complained of violent headache. During a pain the facial muscles began to twitch, then came a general tonic convulsion lasting fifteen seconds, followed by clonic spasms of various muscles for about two minutes, succeeded by stertorous breathing, unconsciousness, and impaired sensibility. One or two feeble pains followed. There was slight frothing at the mouth, and the pupils were contracted except just before a convulsion.

The time of the labor during which convulsions come on is instructive as to their causation, being usually, as in this case, soon after the semi-voluntary bearing down efforts begin. During these efforts the body is more or less firmly set, the veins of the neck dilate, the face becomes red, and manifest interference with and engorgement of the cerebral circulation takes place. I am at a loss to understand how any other interpretation of the phenomena in these cases can ever have been thought of, however we may differ as to the proximate causes of the convulsions which precede or follow delivery. Thus we have two other indications to meet in combating this accident either preventatively or curatively, viz., to ward off cerebral hyperæmia and to lessen the irritability or, as Wigand terms it, the convulsability of the nerve centers. The first indication noted, viz., to lower temperature, is rather a curative than a preventive indication, and yet it will probably add to the safety of the patient if this is also provided for.

What agent fulfills all of these requirements? One important element is essential in a preventive remedy—it should be safe and innocuous even when given needlessly; for the weak point in all preventive therapeutics is that we can never be certain that we have averted an impending trouble. There always remains the skeptical presumption

that the same result would have followed if the remedy had been omitted. For this reason, blood-letting is scarcely a justifiable preventive. There are too many women of whom we may suspect a tendency to convulsions, but who entirely escape, to warrant us in the general use of the lancet; also, though powerful as a curative agent, because of its certainty in relieving cerebral hyperæmia and reducing temperature, it has not the like influence upon the irritability of the nerve centers, and the latter is a *sine qua non* in a preventive measure.

Chloral was first used in puerperal eclampsia in 1871, by Alex. Milne, and by Dr. ———, of Philadelphia, about the same time, or a little before, since which time it has had an extensive clinical indorsement; but we look, also, for an explanation of its action.

Rokitansky* states, as the result of his own and others' investigations, that chloral diminishes the excitability, more particularly, of the motor centers of the respiratory and abdominal muscles, and also the irritability of the vaso-motor centers generally. It has, therefore, a direct controlling effect upon the cerebral circulation by this action, not only in diminishing the irritability, and, consequently, the convulsability of nerve centers, but also in diminishing the blood supply by its control over the vaso-motor centers. Liebreich and Richardson† find that it reduces temperature markedly, a fall of 3° to 4° F. being obtained by doses varying from forty to eighty grains. Bouchut‡ records a fall of 2° C. in an infant; and Hammarsten, in experimenting upon animals, found that the loss of heat was very rapid (6° C. in an hour).

We have, then, every indication fulfilled—an agent to diminish the excitability of the nerve centers, to diminish the cerebral blood supply, and to check the rise of temperature.

* N. Y. Med. Jour., 1874.

† Fothergill, p. 102. Hand-book of Treatment.

‡ H. C. Wood, p. 290.

And this is all that we can at present expect to attain, since we have not as yet accurate knowledge as to any deterioration of the blood, and much less as to any method for its improvement.

In the case already recorded, the woman, after the usual course of venesection and artificial delivery, made a prompt recovery. She had albuminuria for some weeks after her confinement, but this also disappeared. In one year and four months she again fell in labor. It might be added that she had been subject to convulsions in infancy, and was very apprehensive of danger at this time. This was, therefore, a case where, if ever, we might anticipate convulsions, if left to take its own course. To complete the similarity, this labor began also with the rupture of the membranes. At the risk of being tedious, I report its progress in full, in order to show the promptness with which the chloral acted. At 1 P.M., two hours after labor began, the os was already an inch in diameter, but the pains were feeble and infrequent. She was very nervous, and complained greatly of frontal headache. At 2 P.M. she took chloral (gr. xv.), which speedily relieved the headache and nervousness, and coincidentally the pains diminished, not returning with any force until 8 P.M., when the headache also reappeared. The chloral was promptly repeated, with a similar but shorter effect. Pains and headache were alike moderate until 2 A.M., when I found her with severe headache, restless, and during several pains had slight semi-convulsive movements of the arms and facial muscles. Chloral was at once repeated, and again in two hours. The pains continued feeble, but as their return in any force was always accompanied by threatening nervous symptoms, the chloral was continued. At 8:30 A.M., the headache being absent and the patient having had symptoms of ague during gestation, I gave her gr. v. of quinine, without noticeable effect, unless the more regular occurrence of pains an hour subsequently could be at-

tributed to it. Chloral was repeated at 10 A.M., and by 11:30 A.M. the os was fully dilated, delivery being effected by 12:05 P.M. The last few pains were severe, but there was no headache immediately after delivery. Though it is fair to add that three weeks before delivery her urine was free from albumen, and was not subsequently examined, I can not avoid the conclusion that convulsions were certainly averted in this case.



ART. IV.—*Pumpkin Seed as a Tæniafuge*. By CHARLES B. WHITE, A.M., M.D., Surgeon U. S. Army, Columbus Barracks. Read before the Columbus Academy of Medicine.

MR. PRESIDENT AND GENTLEMEN OF THE ACADEMY: I propose to call your attention this evening to a remedy for tape-worm, that, I believe, is not now as highly valued as its intrinsic merits deserve, prefacing my remarks upon treatment, by a few, upon the nature of the entozoa in question.

Tænia, the generic name, signifies in its original Greek, a band or ribbon, and Prof. Heller of Kiel, the recent writer in Ziemssen's *Cyclopædia of Medicine* on this subject, seems to agree with his contemporaries, that three (3) varieties of *tænia* infest man, being first, *Tænia Solium*; secondly, *T. Saginata* (or *medio-canellata*); and lastly, the *Bothriocephalus latus*. The usual source of tape-worm in man is the introduction into his stomach of raw, or imperfectly cooked meat containing the cysticerci cellulosaë or larva of the first and second species, and the drinking of water containing the eggs of the third species (which seems to have no distinctive intermediate stage, as do the others). The *Tænia elliptica* (tape-worm of dogs and cats), and other rarer varieties *have been found* in the intestinal tract of man but rather accidentally, as it seemed, and not commonly enough to engage our attention at this time. The cysticerci of the true tape-worms have been found also in the brain and some other organs of

the human body, but so rarely as to have no practical interest in this connection.

The *Bothriocephalus* is said to reach frequently a length of twenty-five or more feet; the *Tænia saginata*, or *fat* tape-worm, coming next in size and length, reaching twenty or more feet; the *Tænia solium* comes last in size and length, and is called also the *thin* tape-worm, its average length eight feet: instances of much greater elongation are authentic but not usual.

The *Tænia solium* seems to be peculiar to man, never having been found or seeming to be capable of existence (except as a larva to infect man) in other animals. The most usual and favorite means of propagation of this animal is through its larva or embryos in swine-flesh, hence the *Tænia solium* is most abundant and wide spread where pork and its products are in favor and scarcely known elsewhere. The *Tænia saginata* is propagated chiefly by means of its cysticerci in the flesh of horned cattle; it is also capable of passing through its intermediate stage with other animals, but rarely affects them; hence we find this worm excessively common in Abyssinia, where raw, and even warm and still quivering cattle flesh, is so highly esteemed as an eatable.

Dr. Heller states the aquatic origin of the *Bothriocephalus*, and quotes Knoch, of St. Petersburg, as believing that the eggs, introduced into the intestinal tract of man, develop at once into tape-worms, but, he himself sets forth the idea, as rational by comparison, that even with this worm some aquatic animal may usually act as intermediary, and the larva resulting then reach man. The limited distribution of this worm, being found in Europe only, and its prevalence among peoples using fish food largely, such as the Swedes, Finns and Baltic Russians, tells its history. Dr. Heller believes that accounts given of the *B. latus* as occurring outside of Europe can be reconciled by the confounding of the *T. Saginata* with its congener.

The *B. latus* and *T. saginata* are alike in being attached by suction disks, on their heads, to the mucous membrane of the upper third of the small intestine. The *T. solium* has similar suction disks and furthermore a circle of hooklets on the top of its head, doubtless used for firmer attachment; it, also, is found attached in the upper third of the small intestine, and is said to yield to medication more readily than the *saginata*.

The bodies of these animals grow from the heads by a species of budding or gemmation, and the tapering neck, large body and proliferating segments (dropping off from the lower end), all draw their nourishment through the suckers aforesaid; the joints passed are hermaphroditic and are full of ripe, fecundated eggs, seeking a field for development.

The age to which tape-worms can attain, is not known. Mosler reports, in Virchow's Archives, 1873, a case of a butcher, who had removed, fourteen years before, from Russia to a locality not affected by *B. latus*, which worm he was then passing segments of. As already stated, these worms seems to obtain their nourishment through the free suckers around their head, from the products of digestion flowing through the intestine in which the head is located.

Prophylaxis.—The *Tænia solium* being most common in the United States, and its usual source the flesh of hogs, it would naturally occur to us that supervision of the food of these animals, would control the occurrence of entozoa in them, and such is found to be the case. In Asia and Africa, hogs and even neat cattle are frequently scavengers over localities visited by human beings for the purposes of nature, and a fearful spread of entozoa among both men and animals is the result. It is well known that hogs having the run of slaughter yards and sewers, are always more liable to disease and to the occurrence of entozoa, than grain-fed and carefully kept swine. Careful inspection of doubtful meat often develops the fact of its being infected, and its consequent

avoidance. Sufficient cooking of the meat insures the innocuity of cysticerci.

Diagnosis.—Many of the symptoms described by the older writers as peculiar to patients affected by tape-worm, I believe to be unreliable. They may occur, but they may also occur in parties affected, only, by dyspepsia, hysteria, gastralgia, etc. The safest rule is to treat a person for *Tænia* only, after the observation of ripe segments of the worm being passed from time to time—during fasting and after the administration of remedies, a gnawing feeling at the epigastrium is frequently present—there may be present some emaciation, with increased and irregular appetite; but I have frequently been applied to for relief, by parties in good health and nutrition, with no other proof of having tape-worm than the passage of its segments. However, they seemed to think it a great disgrace to have it, and were in low spirits from this cause.

Writers do not refer to power of mobility as possessed by the extruded segments of the *Tænia solium*, though ascribed to those of the dog's tape-worm; but patients have told me that several hours after a passage from the bowels, when the utmost cleanliness had been observed, they have found segments of their worms scattered around their under clothing, near the anus, which had apparently found their way out through the sphincter ani.

I have found cooks more frequently affected than other persons, their handling of raw meats apparently putting them in contact with proliferating germs.

History of Pumpkin Seed as a Remedy for Tænia.—In 1820, M. Mongeny, a physician of Cuba, published his experience with the *flesh* of pumpkins as a *Tæniafuge*. Messieurs Brunet and Lamothe, of Bordeaux, France, published in 1853 (*Annales Ther.*) a verification of the value of pumpkin, but preferred to use a paste of the seeds. In this country in 1851, Dr. Richard Soulé published in the Boston Medical and Surgical Journal, a recommendation of these seeds, and Dr. J.

S. Jones, of Boston, is said to have previously used them. The United States Dispensatory for 1858, gives *Cucurbita Pepo* as a remedy for tape-worm, dose one and a half ounces of the dried seeds. Flint's Practice of Medicine, edition 1868, mentions emulsion of pumpkin seeds as a *Tæniafuge*, but contemplates repeated doses, and values the remedy chiefly as being innocuous.

The German Journal of Pharmacy, No. 55, 1877, commenting on the researches of Dr. Heckel, of Nancy, says: "In the French trade pumpkin seeds are derived from *Cucurbita Mayima*, *C. Pepo* and *C. Moschata*, which are equally serviceable against tape-worm, while the black seeds of *C. Melanocarpa* or the seeds of the closely related genus *Cucumis* are entirely devoid of medical value, since the two latter lack the very membrane in which the active principle resides. Four layers of covering are described for these seeds, and the fourth or innermost coat, which has a dark green color when fresh, changing gradually to greenish yellow, has a chartaceous appearance and consists of two layers; the outer one, made up of hexagonal or pentagonal cells with moderately thick walls, including chlorophyl and a resinous mass; the inner one formed by elongated cells including starch. The resinous mass in the outer layer of the fourth or innermost coat of the seeds is, according to Heckel, the active tænicidal principle, and not, as has been supposed, the fatty oil residing in the cotyledons. Owing to the absence of this papyraceous membrane, which alone contains the resin, in other cucurbitaceous seeds, these latter are inert. At the same time it is shown that even active seeds become inert, when they are blanched in a fresh state, as all the coats are thereby removed."

Administration of the Remedy.—It facilitates the action of tænicide medicine, and especially facilitates the observation of the dejecta, to have the bowels rather free beforehand.

An absolute fast, from all solid and nutrient food, should

be kept for twenty-four hours, then, for example, the fast having been from supper of the previous evening, say at five or six o'clock P.M., administer two ounces of sun dried seeds of well matured pumpkins, denuded after weighing, of their outside coat, being careful to leave the greenish inner layer with the kernel. The prepared seeds may be advantageously powdered in a mortar and eaten with a spoon; some practitioners like the addition of some sugar or of sugar and warm water, to make a sort of emulsion, but these additions are not necessary. In from five (at least) hours to eight or twelve hours later, still maintaining an entire fast, two ounces (or less if it will operate) of castor oil may be administered. All the evacuations, for some hours thereafter, should be kept for examination, for the worm does not always come with the first or second passage, even when already dead. From the close approximation in appearance of many bits of the seeds to the head of the worm, and the fact that the seeds, like worm fragments, are heavier than the water used for washing off the dejecta, this remedy makes the securing of the head of the worm very difficult; but writers on this subject consider it nearly impossible that the head could survive the loss of the body and part of the neck. The hooks of this animal probably prevent its head from coming away as readily as otherwise, even when dead. In several cases coming under my observation where the head was not found, the worm, entire in its body and comprising the small segments near the head, was tied up in knots, and the patients had been aware, within an hour or so after taking the dose, of much disturbance referred to the region of the stomach, and no further segments of tape-worm were passed subsequently.

This remedy is so harmless as to admit of its trial in special cases, where severer drugs would be inadmissible, and yet, where relief was all the more desirable. Your essayist was first led to use pumpkin seeds in this class of diseases, by

the absence of reliable samples of more approved tæniacide remedies, and after seven years of experience with the remedy, believes it to be as reliable as those more costly and rare. It is his belief that the worm first attempts to feed upon the oily and starchy portions, and is subsequently poisoned by the resinous matter of the inner coating of the seeds, hence the cathartic must not be given too soon or it will prevent the desired result.

CLINICAL LECTURES.

LECTURE I.

CLINICAL LECTURES ON SURGERY, DELIVERED AT STARLING MEDICAL COLLEGE, COLUMBUS, O., BY J. H. POOLEY, M.D., PROF. OF SURGERY.

ART. V.—*Cancer of the Breast, Chronic Periostitis, with Ulceration, Fracture of Clavicle, produced by Muscular Contraction, Depressed and Adherent Cicatrix of the Face.*

Case 1. Miss F., æt. thirty-nine; born in Ohio; farmer's daughter; in comfortable circumstances. This lady comes to consult us with regard to a lump or tumor in her right breast. She is, as you see, very thin, somewhat pale, and, though habitually quiet, reticent, and self-controlled, of a nervous temperament.

How long this tumor has existed she does not know. She first discovered it about a year ago; it was then very nearly as large as it is now. It is not the seat of any pain, except for a short time after being handled. You can scarcely see it, but, upon palpating the breast, you discover at once, just external to, and on a line with the nipple, a hard lump or nodule about the size of a horse-chestnut, and situated pretty deeply in the substance of the breast. Now, let me direct your attention to a few points, brought out by the examination of this tumor;—points both affirmative and negative.

First, then, notice the consistence of this growth; it is

hard, and firm—very hard for a fleshy growth. It has, as you squeeze it between your thumb and fingers, a peculiarly, incompressible feel, quite difficult to describe, but very distinct from that of some other firm tumors; there is no elasticity about it. Notice again, that, though it and the gland around it move freely on the pectoral muscle beneath, though there is no adhesion to the skin over it, and no discoloration; and, though you can define its boundaries pretty well, still it does not move freely in the substance of the mammary gland, but seems, to some extent, to be amalgamated with the gland tissue around it. You will notice, too, that, as already said, there is no implication of the integument, no retraction of the nipple, and no discharge from it.

This examination has satisfied me that we have to deal here with a case of hard cancer, or schirrus, of the breast. Let us subject this diagnosis to some criticism. And as against it, no doubt some of you will promptly remind me that this patient denies all hereditary influence, and, though pale and thin, certainly presents nothing that even an imaginative observer would call cancerous cachexia, and has no pain of a severe character; indeed, none at all except what is provoked by handling.

Well, I am glad to have these very points raised, for they are important points, and I have something I wish to say to you about them. They are important points, but I think their importance has been very much overrated in the past. That cancer is occasionally, or even frequently, hereditary, no one can deny, but that it is always, or even generally so, I do not believe. My experience in the matter, which has been neither exceptionally large nor small, but just about ordinary, would lead me to make the statement that in at least half the cases no hereditary influence could be traced. I am not able to give you, in detail, any statistics from the experience of others; but that is of less consequence, inasmuch as they are as accessible to you as to me, and you may consult them at your leisure. I

only wish to express the opinion that the importance of this fact, in the history of such cases, has been much exaggerated, and that for purposes of diagnosis it is not to be relied upon at all. As for the so-called cancerous cachexia, I must confess that for me it has no significance whatever, scarcely even an existence. I have never seen anything of the sort early in the disease, and in advanced stages, though the patient often looks pale and worn, and emaciated enough, I have never been able to distinguish between it and similar appearances presented by patients in the advanced stages of other exhausting maladies. Nor is pain a necessary symptom of cancer; in many cases—the proportion I have no means of knowing—it does exist, and sometimes to a most terrible degree, so as to require very large and constant doses of opium to keep it even partially in check; but this is generally in the later stages of the disease, and during the early period of the case it is quite commonly altogether absent, or nearly so, and it is astonishing to see, sometimes, how far cancerous destruction will advance without giving rise to much pain.

We regard, then, these facts and symptoms, that are absent, as of the least importance; and, on the other hand, we have a tumor developed in the mammary gland of an unmarried woman of thirty-nine. This is of itself a suspicious circumstance. The age is about that of the greatest prevalence of mammary cancer, and the unmarried of this age are especially liable to it. Then the peculiar, inelastic hardness of the growth, and its apparent infiltration into the gland tissue, are very characteristic. There is no implication of the integument or nipple, or axillary glands; it is too early in the history of the case for that; no doubt all these complications would make their appearance in time.

We shall not here enter into any of the interesting questions relating to the structure, pathology, or history of cancer; these will be dwelt upon in their proper time and place; but

as other patients are waiting to present themselves, proceed to that which is immediately practical, and inquire what advice we shall give this lady. And here we have no hesitation as to the proper course to pursue, which is to advise the immediate removal of the affected breast; and, while our patient, who has come here for that very purpose, is being etherized, we will make some brief and general remarks on the operation.

You are probably aware that a difference of opinion prevails to some extent, as to the advisability of operation in these cases. Some, but they, I think, are a very small minority, discountenance it altogether, on the ground that cancer being a constitutional affection, the operation can, at best, only remove a local manifestation, which is sure, in no long time either, to recur *in loco*, or make its appearance elsewhere.

I do not think that sufficient ground, either theoretical or practical, can be found for such a dogma as this. The question as to whether cancer is primarily a constitutional affection, or at first local, and eventually affecting the whole system, is by no means settled; there is much to be said on both sides, and while this is so, it seems to me that early removal is not a choice, but a duty. But, what is of more consequence, there is no lack of evidence that occasionally no recurrence takes place; and the patient is really, thoroughly, and permanently cured by the operation. In view of these considerations, there are very few practical men who would hesitate in the case before us to recommend, or even urge, an operation. Unfortunately, however, the majority of the cases we see are not so favorable as this; and we have to ask and answer another, and a far more difficult question, viz.: in how bad a case are we justifiable in operating, and when ought we to refuse? And here we are beset with difficulties; indeed, it may be safely said that it is simply impossible to formulate a rule that will meet with the approbation of every surgeon, or suit every case.

The best I can do is to give you my opinions—opinions which I have tried to form carefully and conscientiously, on some of the points at issue. First, then, the mere size of the tumor has nothing to do with the question of removal, but *mere* size has very seldom to be considered; if the growth is considerable other elements come in.

There is more or less implication of integument, and when this is extensive it is a very forbidding circumstance, and ought generally to preclude an operation, except in a few cases where the cancer is what is called an open one with, great pain and offensive discharge, and yet the patients general powers are pretty well sustained. Here you may give great comfort, and perhaps prolong life, by removing the source of offence, and substituting for a time at least a clean, healthy sore, and I think you are in duty bound to do it. You do not cure, you do not get great glory, but in the beneficent art of surgery, we must learn to forget ourselves and act for the good of others, and where a conquest is unattainable be content with a truce.

When, together with large size, the tumor is firmly and extensively bound down to the pectoral muscle, you will hardly ever think of operating, though under the circumstances, and with the view spoken of just now, it may sometimes be right to do so. When the axillary glands are much involved, an operation is as a rule unadvisable; two or three enlarged glands may be removed without adding much to the severity of the operation, but when there is an ill-defined mass matted together in the depths of the axilla, such a thing is not to be thought of. The statistics of removal of the female breast for cancer, are very much vitiated, and seem to me almost of no worth at all, for want of discrimination between those cases in which it has been done late or early in the disease.

The outlook as far as it has been presented to us by such estimates is, it is to be confessed, sufficiently gloomy; return

of the disease is the rule, and the average duration of the interval before the return takes place is very little more than two years.

Still for all this I would advise operation, except in a few such extreme cases as I have already pointed out, for the period of freedom, however short, is a great relief, and fully worth the price paid for it by submitting to an operation; and if the disease returns it may be in an internal organ where death will be more rapid and painless, and free from the mental torture, and the personal offense which is so often the worst part of death from external cancer.

Now a few words as to the operation itself. And first never think of anything less than the removal of the whole breast in these cases.

Merely to remove the tumor is to invite return; to be as useful as we have a right to expect them to be, operations for cancer must be done early and done thoroughly, no avoidable risk must be run of leaving any of the diseased germs behind.

In old times the removal of the female breast was a terrible operation, and left a horrid scar; it is enough to make one shudder to look at the plates of the instruments used, as given in Heister's Surgery, for instance, about a century ago. First, there was a great forceps, looking like a pair of rounded callipers, or a spear or fork with one, two or three prongs to transfix the base of the mamma, and then with a razor the whole thing was shaved off even with the surface, and this terrible wound left to granulate and cicatrize as best it might.

Now, by well planned incisions we are generally able to save integument enough, as you see here, to close the wound perfectly with sutures, and as a rule get very prompt union.

You observed that two curved incisions, one above and one below the nipple and extending from near the axillary border downwards and inwards, were made, inclosing a narrow ellipse of integument with the nipple in the middle, the

skin slightly reflected above and below, and the gland quickly and cleanly removed clear down to the fibres of the pectoralis major muscle, which you observe smooth and unruffled at the bottom of the wound. The edges of these two incisions come neatly together without traction, and should the wound heal kindly a mere linear scar only will result. Only one vessel has been ligated, and that with a very fine ligature, though at first a number were seen spouting, but a few moments exposure to the air sufficed to stop all but this one, and of course it is very desirable to have as few ligatures depending from the wound as possible.

There are two things which, if you will remember, will much facilitate this operation, which should always be done quickly, simply because it can be just as well as not. First, make your lower incision so that the position of it may not be obscured by flowing blood, as would be the case if the upper one were first made. Make these preliminary incisions deeply through skin and fat, so as to come down at once on the gland tissue; this greatly facilitates the matter, and saves what may be a rather tedious and bloody dissection; then seize the gland with the left hand and drawing it firmly forward, separate it by quick bold strokes.

* Now for the dressing: Wait for the principal bleeding to cease or to be arrested; it is not necessary to wait for all oozing to stop and the wound to glaze, as it is called. Close the incision neatly by numerous pretty fine interrupted sutures, except for about an inch at one end through which the ligatures may be drawn, and then, which is the most important part of this dressing, apply a firm even compress and bandage. This compress and bandage, are in my estimation, worthy of your serious attention, for if neatly and firmly applied, they squeeze out any blood contained in the cavity of the wound, maintain its sides in apposition, and do more than anything else to promote immediate union. This dressing need not ordinarily be removed for three or four days,

then perhaps a considerable portion of the wound will be found healed, perhaps all the sutures may be removed, at any rate every alternate one may; strips of plaster may take their place where necessary, and the wound again left for two or three days. I have often thought that such wounds are too assiduously dressed, and some experience of this opposite plan has convinced me of the fact, especially in this particular operation.

It requires some little care and attention to thoroughly compress and bring together the sides of such a cavity without making painful or injurious pressure, but it is an art well worth striving for. Let us now examine our tumor. As I slice it in two you observe it cuts firmly, creaking under the knife, and the section looks remarkably like a slice of a raw white turnip.

Dr. Frankenberg, Professor of Pathology, subsequently examined the tumor and pronounced it a typical example of schirrus cancer.

The patient was so far recovered as to be able to go home, a distance of thirty miles in less than a week, the wound nearly healed by first intention. I have seen her two or three times since, and at the expiration of two years, there was no sign of return.

The cicatrix was a narrow line, the skin around was soft and pliable, quite free from any adhesion to the parts beneath, and the lady's general health was very much improved.

Case 2. L. A., a young woman *æt.* nineteen; red hair; pale, thin, transparent skin, of the appearance commonly known as scrofulous. She has had, for over four years, ulceration of the anterior surface of both legs, with extensive enlargement of the bone. On both limbs there is a large ovoid, not very prominent swelling of the bone, about three and a half inches in length, by one and a half in width. Several indolent ulcerations exist on the front of each leg,

and that part of the surface not ulcerated presents evidence of having been so in the presence of thin, red, shining, cicatricial tissue tightly adherent to the bone. No portions of bone have ever escaped spontaneously, but on one occasion, about a year before my assuming charge of the case, some insignificant portions were removed by operation. These do not appear to have been detached, but were probably roughened or elevated excrescences from the surface, which were forcibly removed. No benefit seems to have resulted from this operation. Her general health seems most of the time to be fairly good, though she is of feeble vitality. She eats well; all the functions seem to be normally performed, except menstruation, which has been absent for about a year.

She has very little pain in the affected parts, only occasionally dull, heavy aching.

But no treatment, either general or local, seems to benefit her, though everything that gave any promise of usefulness has been tried by many advisers. Under the free use of iodide of potassium, combined with iron, and a variety of local applications, of which it could not be said that one did any more good than another, the right leg got nearly well, but the left, though apparently healing at one point, constantly broke out in another, and, on the whole, became worse; indeed, after four years of thorough trial, it is apparent that it is practically incurable. The whole of the limb, from the knee to the ankle, and half way round its circumference, is either the seat of persistent ulceration, or of the tightly-drawn, shining cicatricial tissue already alluded to, and presents not the faintest prospect or possibility of recovery.

In this condition, without warning, without pain, or any cause that could be discovered, the thin cicatricial tissue around the ulcers fell into a condition of gangrene, which spread rather rapidly, becoming very offensive.

Despairing of success in our efforts at cure, amputation

was proposed, and promptly acceded to by the patient. The limb was removed just below the knee, and for ten days the patient seemed to be doing tolerably well, though the healing processes were very sluggish. At this time the integument covering the stump, though apparently healthy, became gangrenous. The patient had irritative fever, purpuric spots, some of them of large size, made their appearance all over the body, and she quickly sank and died.

No post-mortem was made. An examination of the amputated limb showed the cicatricial integument so closely united to the superficial surface of the tibia that it could only be removed by maceration. After maceration, the bone presented a long fusiform enlargement, projecting not very prominently from the anterior surface, roughened by numerous, closely-approximated grooves running longitudinally along its surface.

This case I regard as an interesting and extreme instance of a disease I have been observing with interest for some time, but which I do not remember to have seen much notice taken of in books. It is a chronic periostitis of the superficial, or anterior surface of the tibia. As far as I can make out, it does not seem to owe its origin to any uniformly acting cause, but arises in a variety of different conditions.

I have seen it in pale, anæmic patients, like the present, of lymphatic temperament, commonly called scrofulous; also in those to whom no such vice of constitution could be attributed, but who seemed perfectly robust and healthy, and arising spontaneously, as well as caused by some apparently trifling injury. I have observed one case in an elderly man, whose constitution seemed to be broken down by the long-continued poisonous effects of lead. I have seen it at all ages, except early childhood and extreme age, and have never observed it in connection with a well marked syphilitic taint. It lasts for an exceedingly long time, seeming,

indeed, unless influenced by remedies, to be quite indefinite in its duration; it is not accompanied with severe pain, oftentimes with scarcely any. In every example that I have seen, it has been associated with superficial ulceration of an obstinate or intractable character; this may have been provoked by some external injury, like a slight abrasion, or have come on apparently from the progressive thinning and starving of the integument, by the swelling from beneath.

Frequently, but by no means uniformly, there is an exfoliation of small, superficial plate or scale of bone, and in these conditions it is allied to, if not identical with, a peculiar form of necrosis of the tibia, described by Mr. Thomas Whately, an English surgeon, in 1815. It sometimes, but rarely, I think, follows fevers, and other exhausting diseases.

Its pathology I imagine to be as follows: The periosteum, being the seat of slow inflammatory processes, deposits an exudation upon its under surface, which very gradually becomes organized into more or less perfect bone, or perhaps the bone partakes of the disease, and throws out proliferations in the shape of layers or ridges of ossific deposit. By the increase of this bony formation, the periosteum is not separated from the bone but more intimately connected with it, and the swelling, by pressure, encroaches upon the integument, until this, crowded and thinned, and deprived of part of its sustenance by fibrinous exudations in the sparse areolar tissue of the part, either spontaneously, or in consequence of some trifling violence, falls into a condition of ulceration, which, from the conditions causing and accompanying it, is very difficult to heal.

This is the only case of the kind I have ever seen where amputation was demanded; and here, I think, we may fairly question ourselves whether the amputation should not have been done sooner.

The ulceration, for a long time, had shown itself insucep-

tible of cure, there was no normal tissue beneath as a basis for repair, and for an extensive area around there was nothing but cicatricial tissue, which could barely support its own existence, and could not be expected to contribute to the healing, and yet, so averse was I to the thought of amputation, that, though fearing it must come, I refrained from proposing it, until the gangrenous breaking down of this half-vitalized sear tissue, never again to be reproduced, as I believed, made it the only resort. Even now, I must declare, that this girl's death, after the operation, is as inexplicable as it was unexpected. This condition of local gangrene in an apparently healthy stump, with general purpura, is new to my experience. We had no pyæmic, gangrenous, or erysipelatous case in the house at the time.

Generally though slow to be affected, and obstinate to a high degree, I have found these cases amenable to persevering treatment. Rest, with the limb elevated, strapping and bandaging, or other appropriate measures for the ulceration, with the persistent use of iodide of potassium, are the means I have to recommend.

With regard to the use of iodide of potassium, I have some things to say to you which I think are of importance, not only in cases like the one at present under discussion, but as general rules for the administration of this drug, and which will make all the difference between its efficient and inefficient use.

In the first place, it should be given persistently and continuously. It is generally prescribed in chronic conditions where the more stable and enduring results of inflammation are to be removed, and where time is an essential element in the treatment. It is a drug that produces its results slowly, and, therefore, if we expect to gain all the good it is capable of effecting, we must maintain its influence upon the system for weeks, and even months, at a time.

Again, it should be given freely; indeed, I think many of

the disappointments experienced with it arise solely from its being exhibited too timidly. Begin with a small or medium dose, say five or ten grains three times a day, and gradually but steadily increase the quantity as long as it is tolerated by the patient, being guided, not by the amount taken, but by the effects. Oftentimes very large doses are not only well borne, but produce the best effects. I know, from experience, that an ounce or more of the salt may be taken in the twenty-four hours with marked benefit. Take care, however, that when ordering large doses, it is sufficiently diluted; give it dissolved in plenty of water, or, what is perhaps more agreeable, and answers the purpose equally well, direct the patient to take a copious draught of water after each dose of the medicine. It is often an excellent plan to combine the iodide with some tonic, such as an appropriate dose of a bitter infusion or tincture, such as gentian or cinchona. This will often procure tolerance for it, and prevent its disagreeing with the stomach or impairing the appetite.

In anæmic cases the iodide may be combined with iron, an elegant mixture of this kind being a combined solution of iodide of potassium, and the soluble citrate of iron, in the proportion of about ten grains of the latter to the dose. This solution is perfectly clear, and makes a handsome and not unpalatable medicine to take. Besides its use in cases where you are aiming mainly at the specific effects of the iodide, I think that this combination increases the efficacy of the iron, and I am frequently in the habit of combining small doses of iodide of potassium with iron, given merely as a tonic, in anæmia.

One other practical hint in the continuous use of the iodide: I think it acts better if, during its administration, you make use of an occasional purgative, say once every week or ten days.

Following these suggestions, feeling your way with the remedy, looking out for idiosyncrasies, you may give very

large doses, and for a very long time, with great advantage; and indeed, it is the remedy above all others to be recommended in these very cases of chronic periostitis of the tibia, with ulceration.

Only it must be given thoroughly and perseveringly, or it will disappoint you, and lead you to form a very inadequate idea of its powers. I know I have seen very obstinate cases of the kind recover under its use. Just a word with regard to the local treatment of the accompanying ulcers. They do not bear strapping, or any other harsh or very energetic treatment; the surrounding integument is too thin, and devitalized by pressure from beneath. Soothing or inert applications, with the support of a well-applied bandage, seems to serve best. A *well-applied* bandage, I repeat, because everything is contained in that; it should be smoothly and firmly, even tightly applied, and this can only be done when it is applied with perfectly-uniform pressure all the way up, a thing, simple as it seems, not to be accomplished without care and practice both.

Case 3. This man is brought before you this morning, gentlemen, as an example of two rare and interesting facts: First, fracture of the clavicle by muscular contraction; second, recovery from the accident without surgical appliance, and without deformity.

His age is thirty-eight; he was born in Germany; his occupation, driver of a brewery wagon; and he is, as you see, a man of wonderful muscular development, being, as one may say, a perfect Hercules; indeed, I think I never saw such chest and arm muscles in my life. This is still striking, though he has been sick in bed four or five weeks with fever, though not to the same extent as when I first saw him. The fracture, which was of the left clavicle, occurred to the patient while throwing a beer keg upon a loaded wagon, and was at the usual situation, near the middle of the bone, presenting all the usual and well-known symptoms

of the accident, which we will not now stop to describe, as they are well known to all of you. Fracture from muscular contraction alone *may* occur in almost any bone of the skeleton, but is rare enough in the clavicle to be worthy of special attention and comment. Contrary to the rule usually observed in fractures of this kind, it was in this patient oblique, as fractures of the clavicle generally are, and presented considerable deformity, quite as much as we generally observe.

According to Prof. Frank H. Hamilton, our great authority on the subject of fracture, fractures from muscular action occur most frequently in the patella, calcaneum, humerus, femur, tibia, and olecranon process of the ulna. Prof. Parker, of New York, relates a case of fracture of the humerus in a negro preacher, which occurred in the act of gesticulation; he must have been a vigorous expounder of the word. Another case of fracture of the humerus occurred in the effort to extract a tooth. Prof. F. H. Hamilton says he has once known the clavicle broken by muscular action alone. "A large, well-built and healthy man, aged thirty-seven, standing upon the ground, attempted to secure the braces of his carriage top with his right arm, when he felt a sudden snap as if something about his shoulder had given way. A similar case is reported in the number for January, 1843, of the American Journal of Medical Sciences, copied from the *Revista Medica*. The subject of this case was a colonel of cavalry, about sixty years of age. In mounting his horse he experienced a sensation as if something had broken, followed by acute pain in his left shoulder, and, on examination, it was found that the clavicle was fractured in the middle. Malgaigne has recorded three other examples of fracture of this bone, from muscular action; and Parker saw a case which was produced by striking at a dog with a whip." To these six cases I would add one reported by Dr. W. E. Whitehead, in the Pacific Medical and Surgical Journal for March,

1871, the one now before us, and one other of which I have heard, but did not see, making nine in all.

This last case is worth a moment's further notice, inasmuch as it occurred in a child, and is the only case of that kind that I know of. The child fell upon its back, striking, according to what appeared to be a reliable account, on no other portion of its body. It was found to have, in addition to a simple bruise over the back, a fracture of the clavicle. Though this accident did not occur in a way similar to the other cases, still it seems to me most probable that the fracture was produced by muscular action.

Of course I am not to be understood as intimating that this list of nine includes all the cases of fracture of the clavicle from muscular contraction, only those which have incidentally come to my notice, without making any special search for them. Though it is somewhat rare for fractures to occur as the result of muscular contraction alone, still as *part* of the mechanism producing those fractures said to result from indirect violence, I believe it is a constantly operative factor. It is because of the instinctive contraction of the muscles in the act of falling, etc., that the bones are rigidly fixed and held in such a way as to be most easily broken, when, if this influence was absent, they would very frequently escape; it is only on account of the complete muscular relaxation that exists in such cases, that we can account for the marvelous escapes from broken bones of thoroughly intoxicated persons. We may say then, that by far the commonest cause of fracture, is the combination of muscular contraction with indirect violence. The effect even of direct violence may be very much increased by the same influence, as, for instance, in those cases where a direct blow is brought to bear upon the patella, at the moment when the powerful extensor muscles of the thigh are forcibly or spasmodically contracted, of which I have seen several examples.

There is one peculiar form of fracture, of which it has been

my fortune to see an unusual number, the mechanism of the production of which I feel sure is quite often misunderstood. I allude to fractures of the neck of the thigh bone occurring in old people, particularly old women. These accidents quite often occur from the most trifling falls apparently, not infrequently the following is the sort of history given: The patient, an old woman, has got up from her chair to walk across the room, and has fallen without any apparent reason, it is assumed from tripping over some irregularity of the carpet or some similar trifling obstruction; she is found to be disabled and unable to rise, and examination reveals a fracture of the cervix femoris. Wonder is expressed, perhaps, that so serious an accident should have been produced by so slight a fall. Now I do not believe that in most of these cases the fall produced the fracture at all, but on the contrary the fracture produced the fall. We know what changes take place in the neck of the thigh bone in advanced age; the angle at which the cervix joins the shaft of the femur, approaches nearly to a right angle, and the cortical shell becomes very thin, the spaces between laminae of the cancellous structure enlarged, the laminae themselves very much attenuated, and under these circumstances, under the influence of perhaps some unusual contraction of the muscles, the fragile neck gives way and the patient falls to the floor, and is supposed to have broken her thigh in the fall. In cases which I have examined, the patient has been observed to fall forward, or huddled together in such a way that it was almost impossible to understand how the fracture could have resulted from the fall. I am satisfied that it did not, but, as already stated, the fall resulted from the fracture. I should like to pursue this subject of the direct causation of fractures still further, as it presents much opportunity for interesting and useful remarks, but we have no time now, and I must be content to urge the subject upon your future

attention, both with regard to fractures in general, and special forms of fracture. Now, with regard to the treatment of this patient, which has resulted so admirably. It was not intentional, or at least not premeditated. He came in just before one of my clinical days, and it was my intention to have brought him in and applied some form of apparatus before you, but by the time the day arrived he was sick in bed with fever. I determined to keep him flat on his back, with a pillow between his shoulders, and his arm hanging over it. This was not difficult, for during three weeks he was so stupid with fever as to be quite indifferent as to what position he was placed in, or what was done with him.

The result is very interesting, as proving by the event that this is one of the best, if not the very best method, theoretically, of treating fracture of the clavicle. It is interesting, furthermore, as showing that a severe febrile attack does not necessarily interfere with the reparative process in a fractured bone, for this man has made, while lying sick with a fever, a recovery from fractured clavicle in the usual period of four weeks, with the least deformity I ever saw after the accident; indeed, with scarcely any at all.

You will not, however, be able to imitate this plan of treating fractured clavicle; it is altogether too irksome to be employed in a person in health. Such an attempt is entirely out of the question.

You will therefore ask me what form of dressing I would recommend for fractured clavicle, as a general rule, and I must try to answer your question. I shall not go into a lecture on the subject of fractured clavicle, or even attempt to say all that might be said, or perhaps all that ought to be said on the subject of its treatment.

There is no surer index of the difficulty of satisfactorily treating an accident or disease than the multitude of appliances or remedies that have been suggested.

Judged by this standard, we should conclude that fracture

of the clavicle was a difficult accident to treat satisfactorily, that is, so far as to obviate all deformity from the accident, for a very respectable volume, as to size, might be filled with the descriptions of the various apparatus and dressings that have been devised for this purpose. And I am obliged to say I think we should be correct in this judgment. I have tried many of these appliances, and though they have been recommended by their authors or inventors as leading to perfect results in their hands, such has not been the case in mine, and to speak the honest truth, I do not believe I shall have perfect results in the treatment of fractured clavicle, until I have devised a plan of treatment of my own, which I have not yet done, and see no immediate prospect of it, for the ground has been so thoroughly covered that I am afraid to try for fear I should only reinvent some one else's method.

Now, all that I have said is no excuse for our indolently resting content with imperfect results, and true as I believe it to be, I would never have said it if I thought you would so pervert it. Nothing can excuse us from striving, in every case, to attain an absolutely perfect result, and it is only by working in this spirit that we can hope to accomplish the best that is possible, or improve what is imperfect. Besides, when I speak of imperfect results, I do not mean such as interfere with the usefulness of the limb, or leave great and glaring deformities; these would be indeed inexcusable. But there is not, as far as I have seen, that exact coaptation of fragments, that absence of any sign of the accident, which the descriptions of some writers seem to imply. I do not mean to say any of these writers are dishonest, but they seem to me to use language with an inexactness they hardly realize, or else they scan their results with a more indulgent eye than they would another's. To have done with a strain of remark which seems invidious, and yet which I think absolutely necessary, let me say, in further explanation, that I by no means deny that occasional results are attained that are al-

most, if not quite, perfect; but, gentlemen, depend upon it, when such occur they are not the necessary, much less the invariable result of any special plan of treatment. It makes a great deal more difference who puts on the apparatus than whose apparatus is put on.

The principal improvement of the present day is the use of the various forms of adhesive plaster dressing now in common use. Every now and then I notice some new modification of this dressing, which is supposed to be a great improvement, and so it might be if every case, even if fractured clavicle was like every other; but such is not the case, and it is far better to learn the indications to be fulfilled, and then adapt the means to each case, as far as the modification of the essential principles is concerned. To carry the arm backwards, and the elbow well upwards, are the essential points; and it is not generally difficult by these means, and some other slight and simple manœuvre, to bring the fragments into temporary apposition; the difficulty is to maintain them there, and this may need modification of any of these plans. I shall not stop to describe the method of applying the dressing in detail, as it will be shown in the regular course, and I think quite probably in the clinic, too, before the winter is over. I will only say I have never seen any good of the axillary pad, and as it is very uncomfortable it may well be dispensed with. Again, never try to crowd down the salient point or projecting end, usually the sternal end, by putting a compress over it to press it down; this only hides it; when the compress comes off you will find it there still. It can only be satisfactorily reduced by bringing the arm into proper position, and keeping it there.

Case 4. Miss E. T., æt. 19; born in the United States. Six years ago this patient was afflicted with toothache of an agonizing character, connected with caries of the first superior molar tooth of the left side. In the course of the trouble there was great swelling of the cheek, which was poul-

ticed; an abscess pointed externally on the cheek, which was opened by incision; a considerable quantity of pus escaped, after which the pain, swelling, etc., subsided, and soon after the offending tooth was extracted. It was badly decayed—patient does not remember whether there was a bag of matter attached to the root or not, but I think, probably not.

In a short time the opening healed up, but left a very considerable scar, the deformity from which is seriously increased from the fact that it is bound down to the bone beneath, having dragged the superficial tissues down by the absorption of the fat and areolar tissue in such a way as to form a large, deep, and ugly pit or depression. This is a very serious affliction and deformity, especially when, as in the present instance, the patient is otherwise unusually prepossessing in appearance. Here you see this disfiguring cicatrix, situated over the edge of the molar bone at its junction with the superior maxillary bone, forming a deep cup-shaped cavity, nearly half an inch in depth, and giving to one-half of a sweet and pretty face almost a forbidding appearance.

This is the result of an alveolar abscess, a disease which you certainly ought to understand, since it is capable of giving rise to such disagreeable results as you see before you. I shall feel all the more at liberty to occupy your time with this affection, because it is generally ill understood by the physician, who is only too glad to turn over its management to the dentist, who, unfortunately, sometimes knows as little as he, and what is a simple and manageable affair is thus allowed to do a great deal of harm. Alveolar abscess may make its appearance simply as a sac of matter attached to the fang of a tooth after extraction, when people commonly say the tooth was ulcerated (a strange misuse of terms), or else as a gum-boil, or else as an abscess opening through the cheek or at some other situation quite remote from the tooth, which is the cause of all the trouble.

It begins as an inflammation about the fang, or possibly sometimes fangs, of a decayed or dead tooth. First fibrous or plastic material is thrown out around the fang, the bony wall absorbed by pressure and inflammation, and thus a cavity of greater or less size formed in the alveolus. Suppuration now occurs in this deposit of lymph, the external portions of which form the cyst already referred to at the root of the tooth. If the tooth be not extracted it may find an exit by the side of the tooth and discharge by a sort of dental fistula, which may heal up and the trouble pass over for the time with the danger of being renewed from time to time, or it may not; but the matter, after the first discharge, becomes thin and serous or glairy, and continues to be discharged indefinitely. Again, finding its way through the bony wall, it appears on the outside as a gum-boil, and either opens, discharges, and heals up, or remains fistulous till the tooth is drawn. But worse events than these may follow. When an upper molar is affected, and particularly in cases where the commissure formed by the passing over of the mucus membrane from the gums to the cheek come down lower than usual, the inflammation extends to the cheek, the tissues of which become absorbed before the advancing abscess, until at last they are excessively thinned, red, and shining, and the abscess is either opened or opens spontaneously upon the outside. This opening may remain patent, or either with or without the removal of the tooth, generally only in the former case, heal up. If the opening remain it is surrounded by elevated, sometimes very prominent, smooth granulations, and the case is not infrequently mistaken for one of necrosis of the jaw. If it heals up it does so with a depressed, adherent, and sadly disfiguring scar. Now, the cause of all these different phenomena is the presence of the dead tooth, and the cure is the removal of the tooth. Generally, when attention has once been called to it, and a knowledge of its pathology acquired, discrimination of the

disease is not difficult. Sometimes, however, there is more or less difficulty. The offending tooth may be a mere root or fang, very much hidden or entirely covered by the gum which has grown over it, or it may have become detached and slipped into the cavity hollowed out in the alveolus, where it is lying loose. Knowledge of these possibilities is all that is needed for their detection. Occasionally obscurity arises from the distance of the abscess from the offending tooth, as, for instance, in the lower jaw it may appear under the chin, or behind the angle of the jaw near the external ear, or, in the posterior molars of the upper jaw, it may be far back on the roof of the mouth, giving rise to suspicions of necrosis of the palate bones. Here, again, to be forewarned is to be forearmed. As a rule of treatment, when an alveolar abscess threatens, the tooth should be removed. But sometimes, from a variety of reasons, this may be very undesirable. We may often, under these circumstances, prevent the formation of matter and cut short the inflammation by the application of a leech, or even two, upon the gum over the root of the offending tooth. I have many times succeeded in this way. If matter, however, is formed, it should be evacuated early by an incision on the inside of the mouth over the most prominent part of the swelling. No harm, but sometimes great good, is done by this incision, even if no matter be found.

Every effort, of course, must be made to prevent the abscess from opening externally, and this is best done by early incision; but, even if the abscess points distinctly to the cheek, it may, sometimes, be prevented from opening there, by making a vertical incision through the commissure or fold of mucus membrane, thus bisecting it, as it were.

And, though the abscess has already opened upon the cheek, the mischief may be very materially limited by the internal incision.

In these cases, poultices and fomentations should not be

applied to the face. They hasten the approach of matter in this direction ; they weaken and devitalize the tissues, lead to more extensive absorption, and, in every way, tend to aggravate the patient's condition, and insure his deformity.

I have dwelt thus, at some length, on this simple subject of alveolar abscess, but, I need no better excuse for it than the case before us, which shows, plainly enough, that the subject is far from being generally well understood.

Now, to the question immediately before us—can we do anything for this young lady's deformity ?

Yes, I think we can. We cannot remove it entirely, but we can lessen it very much, indeed.

First, I will, by an internal incision, dissect the scar entirely loose from the bone to which it is adherent, and loosen the tissues, subcutaneously, for a little distance all around ; and, then, to prevent the readhesion of the tissues, have them moved about every day, until healing is complete, and the danger is past. Then, after the lapse of a few months, I will remove the scar, which is irregular and rather broad, by including it between two curved incisions, bring the edges of the little wound together with very fine suture, and thus leave a small linear, superficial cicatrix, in place of this deep, ugly, puckered scar. The first part of this procedure, we now proceed to put in execution. I take this small scalpel, and, holding it flatwise, push it up through the commissure of the cheek, until I come to the scar, and then endeavor, by lateral movements of the knife, to separate it from the bone. This, I find to be rather a troublesome proceeding. I have to exercise the extremest care, lest I penetrate the cheek. The scar is so thin, it is so closely adherent to the bone, sending down processes into numerous little depressions, that I am in the greatest danger of button-holing the cheek, and shall esteem myself fortunate, if I escape doing so. But, at last, notwithstanding the thinness of tissue, which permitted me almost to see the knife-blade

underneath, I have safely accomplished the task; and, now, you see, everything is loose and free.

No doubt this cheek will be pretty sore for a time, but notwithstanding this, the soft parts must be freely moved over the bone beneath every day, lest re-adhesion occur.

This case succeeded perfectly well; the surface of the cheek was permanently raised to its proper level, and after a few months the scar was removed in the manner proposed, with very great and satisfactory improvement to the young lady's appearance, and she was immensely pleased with the result.

Since this case occurred, I notice that Mr. Wm. Adams, of London, has proposed a new procedure for dealing with these depressed and adherent scars. His plan is as follows: After the scar has been loosened from the bone, one or two hare-lip pins are to be carried across and deeply underneath it, so as to lift it up to the surface; so that instead of being depressed it will be made actually prominent, or pouting, from the surface. Loosely wound with yarn they are left in place for twenty-four or forty-eight hours, until sufficient exudation takes place beneath to maintain the level of the cheek. Of course the subsequent excision of the cicatrix may be done just the same as in my case, if desirable.

This plan seems a very promising one, and I shall give it a trial on the first opportunity; it will save some pain and trouble, but it cannot possibly give any better result than was attained in the case just related.

[To be continued.]



ART. VI.—*Exophthalmic Goitre.* A clinical lecture delivered at Starling Medical College, Columbus, Ohio, November 7, 1877. By STARLING LOVING, M.D., Professor of Theory and Practice of Medicine.

GENTLEMEN: This patient's name is Maria M.; she is twenty-seven years of age; unmarried; and by occupation a seamstress. She is of medium height, rather slender, and

does not appear to be very strong. She has sandy hair, fair skin, which, over the face and neck, is flushed; irregular features, blue eyes, which are very prominent, or more properly protrude from the orbits, and seem to have less freedom of movement than is natural. You will notice that the lips and gums, and the edges of the eyelids as well, have a bright color; positive evidence that there is not anæmia in this case.

The patient trembles, probably in part from her presence in an unaccustomed place, but not altogether from this, for the same symptom has been observed by me when she has consulted me at my office, when there was nothing to disturb her. Her respiration is much hurried, but not otherwise embarrassed; she has no cough, and no pain in her chest.

Her neck is thicker than it should be in a person of her proportions, particularly below and at the sides; its taper from below upward is more abrupt than normal. The tissues of the inferior part of the neck appear swollen, or rather hypertrophied, and, as already remarked, the skin is flushed or hyperæmic, and the whole neck is flattened from before backward. You will observe that the thyroid body, or glands, is enlarged to several times its normal bulk, and that the enlargement is not symmetrical, being greatest on the right side.

This is generally the case when this body is enlarged from any cause, unless by acute inflammation, as is supposed from the fact that the right lobe is most plentifully supplied with blood from larger size of the vessels. There is strong pulsation in this swelling, quite perceptible, I presume, to those at a distance. There is also to be observed, particularly when I bend the patient's neck a little backward and turn it to one side, throbbing pulsation over the track of the carotid artery, which appears from the touch to be enlarged throughout its whole length as far as it is superficial. This is as strong, as you can see, on one side as on the other. My

fingers are distinctly moved by it. Pressure on the thyroid body gives no pain. The body is quite compressible, and elastic. With each pulsation of the heart, a thrill very decided in character is conveyed from the tumor to the hand.

The patient informs me that her eyes, notwithstanding their great protrusion, give her no pain, and that her vision is not interfered with, except that she thinks she is a little near-sighted, and now and then is somewhat annoyed by black spots floating up and down a little in front. Such spots are observed in various affections, and are called *muscæ volitantes*. They frequently disappear altogether to return again when there is excitement or fatigue. This symptom has little significance in this case.

The conjunctivæ are hyperæmic, but there is no evidence of inflammation, notwithstanding the fact that the lids can scarcely be made to cover the globes. This is a somewhat characteristic condition, for in other diseases when the conjunctivæ are exposed, as you see here, inflammation is speedily set up.

Although the respiration is hurried there is no evidence of disease of the lungs. Percussion and auscultation are normal.

The impulse of the heart is much stronger than is natural or healthy. You can see that it is conveyed to my hand. The sounds of the heart appear to be normal, but its rhythm is changed. The contractions appear to have unequal force. With every tenth or twelfth beat there is an intermission, and simultaneously the irregularity of the contraction is increased. This is so marked as to convey the idea of some animal struggling to escape from a closed sac.

I have observed this peculiar irregularity in another case, in which there was disease of the valves including the tricuspid. Percussion proves that the area of the heart's dullness is increased.

I infer that the heart is hypertrophied, and venture to

express the opinion that there is something wrong with the tricuspid valve, though there is nothing except the alteration of the rhythm of the heart, to support such an opinion.

The pulse at the wrist is strong, full, bounding, and very frequent. It is forty beats to the quarter of a minute. This is exceedingly rapid. Perhaps this is due in part to mental excitement, but not wholly, for I have never found it below one hundred and twenty to the minute since the patient has been under my observation. Frequent pulse is one of the distinctive symptoms of the disease before us, and makes its appearance first of all the symptoms. It is not uncommon to find the pulse ranging from one hundred and twenty to one hundred and sixty to the minute, even before any change can be detected in the eyes or the thyroid gland.

The skin is moist, and not above the normal temperature.

The patient has moderately good appetite and fair digestion, though she is subject to habitual constipation. There is appreciable edema of the feet and legs, probably due to the state of the circulation. The remaining functions are normal, except that of menstruation which has been wholly suspended, without pain or other evidence of disease of the uterus or its appendages, for three months. Amenorrhœa is a common feature of this disease. It is found to exist in more than half the cases.

The patient sleeps well, though she sometimes has dreams unpleasant in character.

Her history is that until rather more than eighteen months ago she had ordinary health, having never had any disease more severe than a sharp attack of remittent fever. She has had occasional attacks of ague, once or twice within ten years. She has had amenorrhœa, menstruation ceasing without apparent cause, and returning after two or three months with no more than what is called domestic treatment; the use of "home remedies" of which we hear so much, and which usually means the use of the infusion of some aromatic stimulant, as pennyroyal or yarrow, etc.

She is poor and obliged to work constantly; her occupation forbids exercise and amusement, and predisposes to uterine disorders, and to constipation of the bowels; so it is not surprising that she should have suffered in this way, without other cause for amenorrhoea, and no other cause appears to have existed for those earlier interruptions of the function. Once or twice she has had what she supposed to be slight rheumatic pains, but she has never suffered from a decided attack of rheumatism.

I have not been able to trace any hereditary tendency in any direction, her parents, brothers, and sisters having enjoyed immunity from constitutional diseases. No member of her family has suffered as she is suffering. Eighteen months ago she began to have palpitation of the heart. Palpitation of the heart means morbid increase in the contractions of that organ, with, as a consequence, more decided and sharper impulse. She thinks the action of the heart has never since been normal. At first the disturbance was not sufficient to cause annoyance, but it has constantly increased, and now, even when she is feeling best, it gives discomfort. Sometimes it is so great as to occasion much distress, and to impede her respiration. At this moment her breathing is embarrassed from overaction of the heart. One year ago, she noticed for the first time that the thyroid gland was enlarged. The enlargement commenced on the right side; very soon it became apparent that the left lobe was also swollen, and the whole gland has continued to grow to the present time. It has materially increased in bulk since last summer, when I first saw the patient.

I do not suppose it will go much beyond its present status, as there is not very great hypertrophy, usually, in cases of this kind. There are, however, exceptions. I remember one which came under my observation some years ago, in which the gland was as large as common in ordinary goitre or bronchocele.

With the enlargement of the thyroid gland, the tissues of the neck became gradually hypertrophied to their present condition.

The patient thinks the change in her eyes began simultaneously with the enlargement of the gland. It was scarcely perceptible at first, but is now so great that the lids cannot be made to close perfectly over the globes.

The throbbing of the carotids has increased with the other symptoms; not perceptible at first to bystanders, it has become the fourth most prominent symptom.

The patient suffers frequently from a feeling of fullness of the head, and sometimes from headache, which, however, is not severe. She also complains that she has occasionally a sensation of ringing and hissing noises in her ears.

What is the disease? It is a case of exophthalmic goitre, Graves's or Basedow's disease, a malady described nearly at the same time in England by Dr. Graves, and in Germany by Dr. Basedow, and sometimes called after one and again after the other of these gentlemen. More commonly it is known as exophthalmic goitre, from its most striking features, the protrusion of the eyes and the enlargement of the thyroid gland. This is the best name, because it expresses more than the others.

This, you will admit, is a peculiar ailment. It is a puzzling one as well. Much investigation has been made with a view of ascertaining its etiology and pathology, but so far with only meagre results. Very little is accurately known with regard to either. It has been asserted that it is sometimes connected with structural disease of the heart, and this may be true of the case before you; but it is seldom that we observe any of the symptoms which characterize this malady in connection with those of the more common diseases of the heart; and the hearts of persons who have died while suffering from exophthalmic goitre, unless hypertrophied, have seldom been found morbid.

Morbid enlargement of the thyroid gland is frequently observed in connection with hyperæmic and inflammatory conditions of the uterus and ovaries, but we find amenorrhœa associated with this disease more frequently than any other uterine disorder, almost always apparently as a consequence, not as a cause, the menses ceasing after the characteristic symptoms have been some time in existence. None of the other organs appear to have any part in the etiology, as they are found healthy after death, or, if diseased, the change is secondary or has a different pathological significance.

It seems to be an idiopathic malady having its origin in an obscure change in the innervation of the organs involved. It is supposed that this change involves in the main that portion of the sympathetic system which supplies the heart and the blood-vessels springing from it. This opinion is based on the fact that unnatural conditions have been found in the main trunk of the sympathetic nerve, in its cervical portion, in persons who have died while suffering from the disease.

It is supposed to be paralysis, because the effect is somewhat the same as is observed from loss of power in the vaso-motor nerves in other parts of the body, and because of the absence of all change which might be attributed to inflammation or to one of the several forms of degeneration.

Increased frequency of the action of the heart is the first, and with the remarkable thrill pervading the arterial system, especially in the upper portion of the body, which accompanies it, continues to be the most remarkable symptom throughout. As we have seen, it originates without perceptible antecedent change in the structure of the organ, and we are obliged to suppose that the mischief lies in the nerves which control its motions. Increased action is what occurs when these nerves are severely injured or divided. This is especially noticeable when the cardiac portion of the pneumo-gastric is cut, but it is also observed when injury

is done to the cardiac plexus. Because the action of the heart is disordered when the inhibitory nerves are divided and connection with the nerve centers is severed, from the similarity of the symptoms, it may be supposed that loss of function or paralysis occurs in this disease through morbid change in the same nerves.

The increased frequency of the action of the heart, and the hypertrophy of that organ, found in occasional cases, is thought to be in compensation for loss of strength.

The paralysis cannot involve the entire nerve supply of the heart; else, we should naturally think, the disease would prove uniformly and immediately fatal.

The dilatation of the blood-vessels, the enlargement of the gland, together with the protrusion of the eyes, may depend upon the extension of the morbid change in the nerves, or merely upon the increased quantity, and the rapidity with which the blood is impelled through and into the parts. In some cases it would appear to be the latter only, for by pressure the swelling of the gland and the protrusion of the eyes may be quickly and almost completely reduced for the moment. In occasional cases, after death, the eyes return to their normal position, and no change of structure is discovered in the orbits, even when there has been much distortion, but much more frequently abnormal growth of connective tissue and adipose tissue is found in the orbits and in the gland. This is what occurs in spurious hypertrophy, an ailment thought to arise from disease of the nerves of the parts affected.

Judging from the appearance of this woman's neck, I should say there is more than mere hyperæmia. The vessels are enlarged in calibre, and their walls are thickened. There seems also to be hypertrophy of the tissues immediately surrounding the vessels. I suspect if we could make the proper examination, we should find the connective, and, to some extent, adipose tissues increased in the parts involved. The

muscles are apparently normal. The abnormal changes are not always so regular as you observe them to be in this case. Sometimes the sole symptom is the unnatural action of the heart with a hyperæmic condition of the neck. Again there will, in addition, be protrusion of the eyes without swelling of the gland, and now and then swelling of the gland without distortion of the eyes. Most frequently when there is irregularity, the change is marked in the heart and eyes, while the gland remains nearly normal. Degrees of severity are also noticed. Now and then, with the disturbed action of the heart, there is just enough deformity to enable the acute diagnostician to recognize his case.

In other cases the change is so great as to give the patient a hideous appearance; a most ferocious expression, particularly if the subject is a male, the effect being heightened by the more strongly marked features and the beard.

The greater number of persons who suffer from this disease are females, generally unmarried, between the ages of twenty-five and forty years, and the class to which our patient belongs, seamstresses, seem peculiarly liable to its attacks. It has been observed in married women. I once saw a marked case in a woman (she had the most hideous face I ever beheld), who was the mother of several children, and who, curiously enough, afterward became insane.

It sometimes affects young girls, but not, so far as I know, women who have ceased to menstruate. It is not common among men.

I may say that so far as my experience extends, the subjects of the disease are irritable, crotchety, and disposed to melancholy, but I never heard of but the one who became insane. The amatory passion is inordinately developed in occasional cases.

The larger number of patients who have applied to me for this disease, have had the nervous or nervo-sanguine tem-

perament, well-marked; some have had the bilious temperament.

The most common complication is anemia, which is present in greater or less degree in the majority of cases, but not in all. Our patient, as we have already observed, is certainly not anemic, at least not appreciably so. Sometimes there is cirrhosis of the liver, or sometimes inflammation or simple hypertrophy, and occasionally the spleen is inflamed, enlarged, or softened. Catarrh of the stomach is now and then a complication, but none of these are constant, and do not appear to have any direct connection with the original malady, unless such as may be supposed to arrive from the disordered circulation.

As said a few moments ago, anemia is the most constant complication, and it is difficult not to believe that there is some direct connection between the changed function of the heart and the state of the blood.

The disease is usually chronic in its progress, slowly developed and continuing months, more commonly for years. But occasionally it is acute and runs a short course. It does not seem, in the chronic form, to tend toward a fatal issue. I do not remember a recorded case in which it of itself proved fatal. But its subjects do not live to old age, they generally die early of some intercurrent trouble, most commonly of pneumonia, to which affection they seem, as one should suppose, peculiarly liable. Hepatitis and cirrhosis are sometimes the causes of death. Any acute disease seems to acquire increased gravity.

Various plans of treatment have been adapted from time to time, none with entirely satisfactory results. The indications seem to be the control of the action of the heart, and at the same time to improve the strength of the organ by influence upon its nerves, or through the blood and general system. Some entertain a different idea and prescribe alterative medicines, inferring, I suppose, the disease to be of in-

flammatory origin. Trousseau recommends iodine, and states that he obtained benefit from it; others have not had good results from its effects. I prescribed it in medium doses in one case, with the effect of making my patient weak, producing increased frequency of the action of the heart, and menorrhagia. I have not prescribed it since.

The various medicines containing the elements of hydrocyanic acid, and the dilute acid in proper form, are recommended by the authorities as beneficial, and possibly they are so, but their action seems to me to be contrary to that most desirable under the circumstances. They all depress instead of strengthening the action of the heart. Besides, they are with the exception of the oil of bitter almonds, and the cyanide of potassium, variable in strength and therefore uncertain in effect. All are dangerous as poisons.

Belladonna controls and strengthens the heart, and is a suitable medicine. I have not been satisfied with it, but you will have ample opportunity to test it for yourselves. It is efficient when given by the stomach, but more so when administered hypodermically. Atropine should be used in preference to the other preparations, and I need only remind you that it is a powerful drug.

Digitalis is held in most estimation by the majority of practitioners in this as in most other diseases in which the action of the heart needs control. It is well known that it strengthens the heart, while it renders its action more equable and slower. To produce this effect it must be given in sufficient doses, and continued until the desired result is attained. The alkaloid digitalin is the most reliable preparation; but the tincture is very good, and neither so costly, nor dangerous in careless hands.

Ergot of rye, from its effect in causing tonic contraction of non-striated muscular fibre, of which there is abundance in the heart and blood-vessels, might be of service. It is, as you know, used to control hemorrhages and passive hyperæmia

and its consequences, including many forms of nervous disease.

The nitrate of amyl has been used, it is said, with the effect of lessening the subjective symptoms, but with no material benefit.

When there is anemia, as is often the case, the preparations of iron may be used with the hope of repairing the blood. Perhaps as good a combination as we can prescribe is the tincture of digitalis, with a preparation of iron.

Too often you will be utterly disappointed in the results of treatment. Not many cases have been reported. While I would advise against hyper-medication, I think you should not fold your hands and declare yourselves without resource. Perhaps some one of you may discover the nature of the disease, and the appropriate remedy. I am obliged, gentlemen, for your patience and attention.

TRANSLATIONS.

ART. VII.—*Notes on two cases of Hydrophobia.* By DOCTORS JOSIAS and CONSTANTIN PAUL. Translated from the French by BARNARD ELLIS, M.D., Alumnus of the College of Physicians and Surgeons, New York.

CASE I.—*Hydrophobia produced by the bite of a mad dog. Remarkable effects of chloral upon convulsions, and of oxygen upon asphyxia.*

One of the guardians of the forest of Vincennes, named Walbert, aged fifty years, made his rounds the 3d of September, 1875, toward six o'clock A.M., and seeing a hound dog, who acted strangely, and was wandering about without a master, he called him several times, without success.

This dog soon met Walbert's dog, whom he immediately attacked, throwing him down and rolling him over. Walbert

sprang and seized the strange dog by the collar, but the dog bit him on the right hand and wrist. With great trouble he was able to master the dog, tie him with a cord, and lead him to his master. On the way he stopped at the house of a comrade, where he washed the wound with vinegar, and cauterized it with ammonia.

The dog was first taken to the house of his master, then, by orders of the Commissary of Police, he was sent to the Veterinary Hospital, at Alfort, where he was declared mad, and where he died two days afterward.

Let us note, in passing, that they noticed a cicatrice on the lip of the mad dog, caused by a bite given probably several days before; and that he had gotten loose by breaking the cord he had been fastened with, and had bitten three other dogs before Walbert secured him.

Walbert, after having so slightly cauterized himself, thought it prudent to come to my office, where I cauterized the wounds with the solution of nitrate of mercury. Unhappily, the poison had had time to become absorbed, and this late cauterization was without effect.

An examination showed one wound on the back of the hand, at about the separation of the metacarpal bones of the thumb and forefinger, and another on the face of the wrist, over the inferior extremity of the cubitus.

Walbert was an old and brave soldier; had been at the assault of Rome, and afterward at Sevastopol. He accepted his situation philosophically, knowing well its gravity, and said no more about it.

Twenty-six days after inoculation, the 9th of October, he experienced some phenomena, of which he did not understand the importance, but which indicated the invasion of the disease. On that day he had been sent to look for some young swans, in the lake, and he was surprised to find that he had difficulty in carrying a burden, which to him had never seemed heavy before. After finishing his task he

found his arm painful, a pain beginning at the wound, at the wrist, and soon extending to the shoulder.

During the night and the following day this pain augmented in intensity. He took it for a rheumatic affection, and wrapped the arm in flannel. On the morning of the 12th of October, two and one-half days after the invasion of this pain, he had lost his appetite, and feeling ill at ease, sent for me. However well I might know the antecedents of the patient, and however uneasy I might have been about his fate, I yet took no alarm, the patient being subject to these pains, and the weight he had carried explaining its localization. I prescribed an emetic, and promised to return in the course of the day.

The patient took the emetic and the ordinary dose of warm water, without showing any particular signs, and vomited abundantly. In the afternoon, just three days after the invasion of the prodromic period, he was taken suddenly, in drinking, with a spasm, in the region of the muscles of deglutition, and this phenomenon was reproduced several times. The disease had come, therefore, to take a significant character. I recognized hydrophobia. The extreme gravity of the disease, and the impotency of therapeutics, made me desire the assistance of a confrere, and I begged Dr. Constantin Paul, of the Hospital Saint Antoine, to aid me.

On the morning of the 13th of October we saw the patient together; we found him without fever; the skin normal in temperature, the pulse-beats sixty per minute. The patient was calm. He was a man of great energy and of great coolness.

We took again, in detail, the history of the prodromic period, and the patient repeated to us the details already recorded.

Walbert complained of the greatest difficulty in drinking; he was taken immediately with convulsive spasms; but, as he is very energetic and has great control over himself, he

managed, with extreme difficulty, to drink two cups of beef-tea.

Not only the sight of liquids gave him spasms, but the simple fact of speaking of drinking, brought on these fits. He was then taken with a convulsion of the pharyngeal muscles, and which is extended to those of the neck, which raise the shoulders, as is sometimes seen in asthmatic attacks. These spasms last some instants, and then disappear. The tongue is thick and the edges slightly indented by the teeth; the tongue rested in a bed of sordes. The most careful examination of the floor of the mouth, and of the under surface of the tongue, discovered no traces of those vesicopustules, which have been called *lysses*. At the same time, it would have been more easily seen than ever, as the patient had a ranula, and the floor of the mouth was lifted up and propped by a cyst. There was nothing either in the throat. There was neither spirtation nor sputtering. The lips were dry and showed no traces of salivary or bronchial froth. The respiration was free, though the patient felt a sensation of pain behind the sternum.

Walbert was calm, though he knew his state, and so conscious of it that he told his wife the evening before of his situation, and made known to her his last wishes. His senses are as calm as his mind. There were no hypersesthesia of any kind; the skin recognized any contact, and perceived the pain of pinching, but only in a normal manner.

Treatment.—In view of the failure of all the means which had been employed against hydrophobia heretofore, we confined ourselves to the filling of the three following indications: 1st, to sustain the forces of the patient; 2d, to suppress the occasional causes which bring convulsions; 3d, to exercise powerful sedation upon the nervous system.

Since, in the case of our patient, it was the action of drinking which determined the spasms, we chose a small coffee-pot for him to drink from, so that when we offered him

drink, he could neither see nor smell it, and we enveloped the pot with black merino, so as not to excite him with its brilliancy. The room was darkened, and silence observed near the patient. When we tried to make Walbert drink from this vessel, which we called the *marmite du diable* (the devil's saucepan), he felt slight spasm of the pharynx, but we made him take notice that he did not know what was in the vessel, and perhaps that it contained nothing at all. Whatever may have been the influence of this thought the patient carried the vessel to his lips and drank, at long draughts, a large cup of beef-tea, which it contained. Later on he continued to drink in the same manner. We prescribed, besides, soup with an egg poached in it, and water with a little wine in it. Finally, we had an enema, which we had brought with us, given to him. This consisted of seventy-seven grains hydrate of chloral, and five drops of laudanum, in nine ounces of water. Half an hour afterward the patient experienced an exquisite calm, and said he felt cured. We got him to take his soup in a porringer, with a wooden spoon. He ate with pleasure, drank a little wine and water, then fell asleep and slept two hours. When we returned, at five o'clock P.M., we found the patient calm, and in a state of ease and comfort unlooked for. The action of the chloral had been rapid; the pulse was slightly accelerated, but the skin cool. The sensibility of the skin is blunted, but is preserved intact at the hands. It has disappeared at the inferior members, and when pinched he does not perceive it.

There has been no fit since the injection of chloral, which was followed by a second one of the same kind. They gave, besides, a third, and we prescribed a fourth for the night. Finally, in case asphyxia supervened, we ordered an India-rubber bag, containing six gallons of oxygen, furnished with an inhalation tube, placed by his bed, as also nitrate of amyle in case of coma supervening.

The night was passed well, Walbert sleeping two hours, and when we returned in the morning we found him in a most satisfactory state. He no longer has convulsions, only a little hesitation when he commences to drink. Such was the satisfactory state of our patient; unhappily, it was not to last. On Friday, the third day of the convulsive period, Walbert was found to be in good condition in the morning, after a sleepless night, it is true, but calm. He had had no convulsive phenomena for the last forty-two hours, except an itching and excitation of the penis, followed by an ejaculation, and which excitation had produced the same twice the evening before. He drank again from the coffee-pot, but after drinking, was taken suddenly with an attack of asphyxia, with extreme dyspnoea; the integuments became violet colored, and he threw off a bronchial mucus, bloody and frothy, escaping in a continuous manner by a sort of slow and involuntary expression. The respiration was diaphragmatic, but jerky and insufficient. They immediately injected the six gallons of oxygen, little by little, into his mouth. We arrived at half-past seven o'clock, three-quarters of an hour after the beginning of this attack, and as he appeared to be in agony, we gave him a little nitrate of amyle. At this moment the patient was in such a state of asphyxia that we believed him on the point of dying. Nevertheless, he was taken in a few instants afterward with a desire to vomit. He made considerable efforts and brought up a large quantity of liquid food, at the same time rejecting an enormous quantity of bronchial mucus. The patient soon came out of the comatose state, recovered his respiration, and seemed not to feel any more asphyxia. He spoke, asked to see us again, and begged his comrades to call his superior officer, the head guardian of the forest, who came quickly. Walbert received him with pleasure. He said he knew he had hydrophobia, and that it was a mortal disease, and begged the chief to take care of his wife and children. This was said calmly by a man who knew no fear.

We returned a short time afterward, and finished by giving a new injection of chloral. The patient had escaped asphyxia, thanks to the oxygen, and we again had a little hope for him. Unhappily, toward four o'clock he sank suddenly, and was carried off by syncope, after three days of the convulsive period.

Thus far, passing rapidly over several details, we have only described the progress of the disease. Let us now take up these details, one by one, so as to give to this case all the interest it may offer.

In the first place, the question is evidently one of real rage—debut, incubation, prodroma, hydrophobia, asphyxia, etc., and it is so true, that we need not justify our diagnosis, nor search for analogous cases that may be more or less extraordinary. We have to do here with a case of rage so clear, that the description of it is, so to speak, classic.

First of all, we recall attention to the fact that the dog which bit Walbert on the hand and wrist was really mad, the proof of it having been ascertained by the professor at Alfort, and we could not offer to you more competent testimony. As to the incubation, it was thirty-six days from the moment of the bite to the beginning of the invasion of the prodromic period, or thirty-nine days to the appearance of the first fit of hydrophobia and convulsions. This duration of incubation is short, because the average established by Doctors Bronardel et Bouley (*Dictionnaire Encyclopidique*, æt. "Rage"), for bites of the superior numbers of men between forty and sixty years, is seventy-four days, while it is but forty-five days in cases of bites of the face, and forty-two days where the inferior members are bitten.

If, in place of considering the seat of the wound, we regard the age of the patient, we find that the average period of incubation at that age is sixty-five days, while in the case of subjects under twenty years, it is shorter, or fifty-seven days.

The invasion of the disease was classic. It commenced

by a pain in the cicatrice, at the wrist, which mounted to the shoulder. The patient had, besides, malaise and extreme lassitude, indicating the invasion of the acute disease. We miss, in this description, only the ordinary melancholy of the patient, which generally shows itself at this moment, and oftentimes sooner, during the period of incubation. This is escaped ordinarily only through ignorance of danger. But this was not the case with Walbert. He understood the "rage," since he was particularly charged to arrest all suspected dogs. He knew that the one which had so cruelly bitten him was really mad; but he lived in a stoical calm, which he did not belie for an instant, and which was the admiration of his comrades, and which also struck us, as well as our confreres who had come to see the case and assist with their counsel, and all retired, deploring the misfortune to a man so courageous, and a soldier so brave.

All we desire to say of the period of invasion is, that its duration was three days and presented no trace of "lyssa," or of vesico-pustule at the orifices of the sub-maxillary, or sub-lingual glands.

The period of excitability was marked by violent hydrophobic convulsions, and characteristic also for those who had never seen them before, nor was there any hesitation about the diagnosis, either with the physicians, or with the guardians of the forest present, who had already watched with their comrades in like situations.

It must be noted that these convulsions were confined to the muscles of deglutition, and to those of the neck, and did not at first extend further, and that it was only at the end of two days that they reached the vesiculæ seminales, and at the end of two and one-half days the respiratory muscles.

During these convulsions, brought on not only by the sight of drink, but at the mere idea of drinking, the nervous system, the same as before the administration of chloral, was in a state of relative calm, the senses had suffered no

hyperaesthesia, and the skin retained its normal sensibility, particularly not showing any painful impression from the contact with cold air, an impression so marked in the case following this. It is true that we hastened at first to protect the patient from all occasional causes of excitation, with the greatest care.

We have said previously that the patient had extreme lassitude, and the tongue was covered with sordes, in the prodromic period; and that was all that denoted the acute stage of the disease, as we find no fever, properly speaking, and the slight variations of the temperature were insignificant.

Let us note again the pollutions which took place at the end of the second day of the convulsive period, which were preceded by a vivid sense of excitement in the sexual organs, but apparently without any appreciable duration of the erection.

During these first two days he had no expectoration, the secretions of the mouth were normal, and not until later, at the moment of the asphyxia, was there seen any slobber.

In reality, it was at the middle of the third day of the convulsive period that the patient, taken suddenly with convulsions of the respiratory muscles, and particularly of the thoracic muscles, ejected a large quantity of bronchial froth, which seemed to be expelled by a sort of continuous pressure by a true contraction of the respiratory muscles. It escaped little by little as from an inverted vessel, the very energetic action of the diaphragm not appearing to hasten its escape. A sort of pharyngeal and guttural roll, nevertheless, proved that this froth was agitated. This fact struck us, because it recalled to us an observation of Dr. Féréol, in which the eminent physician of the Maison de Santé had noticed that the froth was bronchial, and not salivary. In this respect our case was analogous to his.

Would this bronchial froth be inoculable? The fact is

possible, but we had no animal to inoculate at the time, and we know that to obtain a positive result, heretofore exceptional, we must operate immediately, before the liquid has time to cool.

However that may be, let us retain the fact that we observed no salivary mucus, but only the bronchial froth, or aerated mucus, which fills the air-passages in all cases of suffocation.

We note besides, the fact, so astonishing, that the patient was able to survive the agony produced by the asphyxia, and we ought evidently to attribute the fact to the oxygen, though the awakening from this state had been without doubt excited by the nitrate of amyl, the action of which upon the brain is, as we know, immediate.

Finally, we signalize the sudden death—death by syncope—of a man whose nervous system appeared to have exhausted all its force in six days, after the economy had taken thirty-six days to arrive at this terrible nervous tension; who fell in a moment.

We beg you to excuse the length of this paper, but it seemed necessary to be precise as to facts which the physician so rarely sees himself, and of which he has, so to speak, no experience; and we ask you to return an instant to the history of the brave Walbert. If he was hydrophobic, we would have been able to say that he was not enraged, because at no moment did he have a period of furious excitement. Quite the contrary, it was fully recognized by all those who nursed him, and they witnessed it at each moment. If, for a moment excited by the pollutions and intoxicated by the chloral, he did ask that his wife come and partake of his bed, he was quickly brought to reason, and a few words from his nurses sufficed to make him abandon his demand immediately.

What was striking, on the contrary, in the history of Walbert, was the courage and manly energy of his charac-

ter. He remained master of himself in spite of the excitation produced by the disease, and the conviction of a near and inevitable death. Also, he said to us: "Spare nothing to cure me. I am ready to submit to the most painful agonies. Dissect me if it is necessary, but I want to be cured."

What have we done for him? Very little, in reality, since we were not able to save him; perhaps much, if we put what we gained to the better acquaintance of the disease.

We have said that our first care was to suppress every thing which could excite the senses and bring on convulsions. Nothing that was shining or glistening or fluttering, and no noise or confusion, was allowed near him, nor was he surrounded by any but those who tended him.

But the action of the chloral has been the most remarkable. In half an hour after the first injection of 77 grains chloral and 5 drops laudanum the sedative effects were established. The precordial anxiety had disappeared; the hydrophobic convulsions had ceased almost entirely; the patient was able to eat some soup, drink some beef tea, and to sleep two hours during the day, and the same time during the night. At the end of twenty-four hours' treatment we had given the patient 385 grains chloral and 25 drops laudanum. He had not experienced the action that is said to be the physiological one of this medication, but he had a little coolness of the skin and a slight acceleration of the pulse. The second day was like the first, except that as the pulse had fallen to 52 at one time, only 77 grains chloral were given, so as to let the pulse recover itself quickly.

Well, under the influence of this treatment, we were able to guard our patient for twenty-four hours against an attack; he had been able to sleep by snatches, he had been fed, his food had been digested, as the stools proved; and we had, during this time, the illusion that he might be cured.

The energy of the patient, the real influence of the treat-

ment, the exact execution of our orders, the supplying of the oxygen when asphyxia supervened, all permitted us to hope we were to see that for the first time a case of true hydrophobia had been cured. Without regard to the future, we say that this result alone ought to encourage us not to despair of curing hydrophobia, and when we came back to see the case, with Dr. de Remse, who had accompanied us, we experienced, in common, that joy which the physician feels when he has hope that his patient has escaped a mortal danger.

Unhappily, this hope was of but short duration. When we returned, at half-past seven next morning, we found the patient asphyxiated, a state announcing near death. The nurses were administering oxygen. The respiration was nearly null, on account of obstruction by the bronchial froth, and the gas was injected into the mouth by pressure on the elastic bulb. But little entered, still it sufficed to retard the death, which was inevitable at this moment but for this succor. But we must confess that, though the administration of oxygen in such cases may be rational, it is arrested by the difficulty of making the gas penetrate and pass the obstruction of froth. We held ourselves in readiness to perform tracheotomy, and give artificial respiration, but renounced the idea, because the same obstacle existed in a larger degree in the smaller bronchial tubes than in the throat or larynx.

As to the nitrate of amyl, it revived our patient, but it was only a passing excitement. The nervous system was exhausted, and the patient succumbed in the night, as a lamp goes out when there is no more oil. We had preserved all the forces of the patient, stopped the spasms, and arrested the asphyxia, but all that was not sufficient, and we are yet to wait to see a case of hydrophobia cured.

Nevertheless, we have thought that this action, so natural, of the treatment as we have been able to establish should be made known, and that it was worthy of your notice.

Let us add that we took care to destroy the oxygen tube, and the wooden spoon used.

We shall be very brief in the history of the second case, as we saw it but a moment, but which presented some remarkable features.

CASE II.—*A little boy, nine years old, was bitten on the right hand by a mad dog May 26, 1875. The dog was seized, recognized as mad, and carried to Alfort, where he died.*

The child, ignorant of the danger, returned at once to his ordinary plays and studies, and went on for one hundred and thirty-eight days without perceiving anything unusual. At the end of this period of incubation—exceptional for a child bitten in the hand—he commenced to feel a pain at the cicatrix. He was taken with a sort of itching, which made him constantly scratch himself. Two days later this torture became a pain, which extended itself to the shoulder. Four days afterwards he had difficulty in swallowing, and thinking he was attacked with quinsy they sent for a doctor, but he being absent, a medical student came. They found nothing in the throat, but ascertained that when the child would drink, he was taken with a sort of spasm. Nevertheless, he was able, by an effort, to control this contraction, and to the end of his sickness, he was able to drink and to eat some food.

But the remarkable feature in the case, was the impression of the cold air. The skin was so sensitive that each time the door was opened, the fresh air, when it had scarcely reached his bed which was at the end of the chamber, was sufficient to bring on anguish and convulsions. The simple fact of speaking to him when opposite, though three feet off, put him in the same state. The simple agitation of the air by a sound was also sufficient.

Here the hydrophobia was feeble, but there was especially aerophobia, a phenomenon already noticed by several authors. Asphyxia supervened at the end of the sixth day, with re-

jection of frothy bronchial mucus, and each time they wiped away this slaver, the contact of the handkerchief brought on the agony and contractions. Besides, he had contractions of the hands. The fingers were rigidly flexed, and he made efforts with the opposite hand to extend the fingers. This contraction did not last to the end, as it would cease for a while to reappear soon after. There was at the same time dysuria, and a permanent erection which had brought the yard on to the belly. This erection commenced on the evening of the sixth day, and ceased at the beginning of the seventh day, just before death, which took place by syncope.

We saw this child only in the last moments, and we quickly gave him an enema of thirty grains chloral, but it was returned immediately, and he died soon after.

We desired, nevertheless, to make known to you this case which offers much of interest.

First, the exceptional duration of the incubation, 138 days; second, the special form of the hyperæsthesia, which here has been ærophobia, the slaver which was bronchial as in the preceeding case, and not salivary, and finally the satyriasis which has supervened at the end, and death by syncope.

Here then, gentlemen, are the two cases which we believed it our duty to present in detail, and we beg you to excuse the length of the description on account of the interest which attaches itself to facts that the physician rarely has an opportunity of witnessing for himself.

CLINICAL RECORDS.

ART. VIII.—*Case of Transient Paralysis*. By E. B. FULLERTON, M.D., Professor of Materia Medica and Therapeutics in Starling Medical College, Columbus, Ohio.

J. J., inmate Ohio Institution for the Blind; half-witted; aged thirteen last August; menstruated first on Saturday,

November 3d, the fact being discovered while she was being given a bath. Menstruation previous to bath was profuse, afterward it was checked for eight hours. She seemed well during the interval, showing neither undue depression nor excitement. While going to bed at 8:30 P.M., as her head dropped upon the pillow, she was seized with a convulsion, the only symptom noticed by the children being stertorous breathing. The assistant matron was called, and when she reached her, she was still insensible and breathing stertorously, but was aroused within a short time afterward, appearing confused, and saying, after a time, that "she had been asleep," then returned to entire consciousness, the assistant matron leaving her one-half hour afterward; the children in the room again noticed the peculiar breathing, and, the attendant being called, found her entirely unconscious, rattling in the throat, involuntary druling of saliva, and soon passing into a general convulsion that lasted for about ten minutes.

These recurred during the next two hours, at intervals of about ten minutes, the child lying unconscious and breathing stentorously during the interval. When I arrived, the child had been free from the convulsive seizures for a period longer than usual, and the character of the breathing had improved. I stayed in the room for an hour, during which time the patient slept heavily, but not otherwise unnaturally, the pulse being full, the temperature normal. No more convulsions supervening, I directed her to be aroused. This was done with difficulty. Her ideas were confused, and it was sometime before she recognized her usual attendant. It was now noticed that her face was drawn to the left side, remaining perfectly passive when she smiled or attempted to speak, and, on further examination, it was found that the whole right side of the body was involved in the paralysis, the leg in less degree than the face and arm, as there was, after prolonged titillation, a slight, voluntary

movement. When told to put her hand to her face, her left only went up, and when it was insisted that the right should be raised, the left again responded, the right hanging lifeless. With no further appearance of convulsion, and a slight return of menstrual flow, I left the patient. At nine A.M. the following day, after a good night's rest, the menstrual flow had returned, and the paralyzed condition entirely disappeared. While recognizing that the easiest manner of explaining the case would be to call its manifestations hysterical, yet there are several very important objections that arise to such a summary dismissal of the subject. While simulated convulsions are very common, simulated paralysis is not so common, and simulated hemiplegia is, in my judgment, nearly, if not quite, impossible. The simulated conditions of hysteria, usually imply a known form, after which they are modeled; that is, the patient has some previous knowledge of the disease, which she, more or less, unconsciously attempts to imitate. In this case the total blindness of the child would preclude such previous knowledge of convulsive or paralytic condition, as to make any hysterical imitation of them sufficiently perfect to deceive; while her mental condition would preclude her either understanding or remembering any description of such conditions given her by others. Aside from this, the character of the convulsions, as described to me, were apoplecticiform rather than hysterical. The sudden stoppage of the flow of blood, the fact that the symptoms first manifested themselves as the child's head touched the pillow, the character of the convulsions, and the decided, yet transient, paralysis following it, are suggestive of apoplecticiform cerebral congestion.

CORRESPONDENCE.

LEIPZIG, *November, 1877.*

DEAR DOCTOR: Perhaps a few items concerning the University of Leipsic will not be uninteresting to your readers. This university is one of the oldest in Germany, and owes its early foundation, indirectly at least, to the university at Prague, the capital of Bohemia, which was the first German university. The latter school was founded in 1348, and was frequented by large numbers from all parts of Europe. In 1409 the King of Bohemia emitted laws very much limiting the extensive privileges of the foreigners attending instructions there, when they left in a body, and, among others, founded the university at this place.

The old university buildings, which once served the purposes of a monastery, traces of which are still preserved, are situated in the heart of the city, and contain the library and lecture rooms for all the faculties, excepting the medical. The buildings for the medical department are situated in the eastern outskirts of the city, and, with the exception of the hospital, are all of them of modern date, and furnished with the newest appliances and commodities. They consist of the building for anatomy (called simply "anatomy" in Germany), the physiological institute, the chemical laboratory, the hospital, and the pathologic institute, and stand in the order mentioned.

The anatomy, the newest building, is a large and elegant structure, serving only the purposes of anatomy.

The physiological institute, under direction of Prof. Ludwig, is especially noteworthy. Though not so large as the former, it is a building of ample dimensions, devoted exclusively to experimental and chemical physiology, and is

not surpassed, if equaled, by any in the country, excepting, perhaps, the one just completed at Berlin, under DuBois and Helmholtz.

Nearly eight hundred medical students attend the courses here—the largest number at any one school in Germany—this place having taken the lead from Berlin in the last few years. The students of all faculties number over three thousand for this winter semester.

The faculty, though not presenting that array in numbers as the one in Vienna, leaves nothing to be wished for in regard to quality—as proof of which, I may mention such names as Brann and His in anatomy, Ludwig in physiology, Wagner in pathology, Kolbe in chemistry, Thiersch in surgery, Coccius in ophthalmology, and Credé in obstetrics.

A severe loss was occasioned by the death of the eminent pathologist and clinician, Wunderlich, in September last. He was born in the Black Forest, in 1815, and was the son of a physician. He first attended the Polytechnic at Stuttgart, and then studied medicine at Tübingen, from where he graduated in 1838, and then went to Austrian, Belgian, and French schools. After his return, he was made assistant at the "Catharinen Hospital," and, one year later, published his first work—"On Nosology of Typhus." In 1843, after having been assistant, and then director of Heerman's clinic, he was made professor extraordinary. Three years later he became professor ordinary. In 1841 he began, with Roser, the publication of the "*Archiv für Physiologie und Heilkunde*," soon followed by his "*Hand-Book of Pathology*." When Oppolzer left Leipzig, in 1850, he was called to fill the vacancy, and here began his studies on fever process and bodily heat, to the publication of which is owing the universal introduction of the fever thermometer.

Wunderlich was an early and firm adherent to the new school which was being established at Vienna by Skoda and Rokitansky, and had for its object the breaking with the old

doctrines, and the foundation of therapeutics on a basis made by physiology and pathological anatomy.

At the clinic, Wunderlich's place is now taken by Prof. Wagner, and rumor has it that either Cohnheim or Rindfleisch are to be called here for the chair of pathology.

A. M. BLEILE.

211 W. THIRTY-EIGHTH STREET,
NEW YORK, November 26, 1877.

Prof. J. H. Pooley, M.D., Editor Ohio Medical and Surgical Journal :

DEAR DOCTOR: The medical world of this great metropolis is again displaying its usual activity after several months of rest and recreation. Many of our truth-seeking laborers in the field of advancing medical science—and we have many such among us—have returned to their posts of duty from far and near—some refreshed and seemingly rejuvenated; others with the imprint which the tooth of time has depicted upon their faces as a sign of advancing years. They are again dispensing the fruits of their experience and accumulated knowledge to those suffering from the ills and ailments to which human flesh is heir.

Professor Sayre, of Bellevue Hospital, has been the recipient of many honors in England, where he has exhibited the Plaster of Paris bandage during the last summer.

Professor Bozeman, of this city, has also returned lately from abroad, crowned and adorned with *well-merited laurels*! His beautiful operations for the cure of vesico-vaginal fistulæ, as demonstrated and successfully practiced by him in Paris, Heidelberg, and in Vienna, Austria, in the late Professor Simon's, and in Prof. Carl von Braun's Clinic, in the presence of the most eminent surgeons of the Vienna Medical School, have shed lustre on that excellent American gynæcologist's illustrious name.

Many other notables in our New York profession have returned (among whom I will mention only Professor Brown-

Séquard) to resume their practice here ; but space does not permit to mention all, and I must be pardoned for leaving off here my report of the arrivals and the return to this city of other eminent medical men, as I intend to communicate other medical news that might interest our professional brethren who live at a distance from us, and are interested in our doings.

The opening exercises of the Bellevue Hospital, and of the University Medical Colleges, the College of Physicians and Surgeons, and the Women's Medical College took place in the early part of October last. The disciples of Æsculapius are multiplying in large numbers ! Thousands upon thousands of young men and women—of doubtful ages—seem to choose the study of medicine in the expectation of a bright and splendid future. How many of these will meet with success, and how many will be sadly disappointed, would be impossible to foretell. The honest, truthful, energetic, skillful, patient, accomplished, painstaking, conscientious, modest, self-reliant, courageous, thoroughly educated student, with the necessary pecuniary means to get a fair start, will, in all human probability, be successful. The lazy, negligent, careless, shiftless, dishonest, on the contrary, will find no encouragement, and will hardly ever succeed. Whoever commences the study of medicine as a money-making business will, in the majority of cases, always be disappointed. I understand from many of my professional friends here who do not exaggerate, that one-half of the New York physicians, even those who have been here practicing faithfully, and attending to their professional duties continually and conscientiously, do not collect money enough to defray their daily necessary expenditures. The physicians of New York are complaining of the hard times, as well as people of other pursuits. The depreciation in real estate has forced even the rich to curtail their expenditures, and to become more economical than formerly. This enforced economy is felt by

the whole community, more or less. Where people used to occupy, a few years ago, a whole house, two families of the same number of individuals now occupy the same, in many instances. Instead of buying two suits of clothes a season, one suit has to last two seasons, and so on. The wealthy, the middle, and the poor, or laboring classes as they are usually called, all suffer alike and in proportion by the hard times. The physician's bills can not be collected readily; the charges have to be more moderate; and although there are plenty of sick at all times from avoidable and partly, as far as we know, unavoidable causes, still there are too many physicians in this city to be prosperous.

Another cause why practice is bad, is to be found in the numerous dispensaries. Even well-to-do people go to the out-door departments and public dispensaries, where not only skilled medical aid is furnished *gratis*, but also medicines. Our medical colleges all have their clinical instruction, and absorb a great deal of material that would be compelled to seek relief at the hands of private physicians. At first, dispensaries were established for the poor and destitute only, but now-a-days the well-to-do even go there to be treated free of charge. One dispensary, the New York Hospital (out-door department), charges one dollar per month for the medical attendance of one person on the so-called "provident plan"—a sort of insurance against sickness on the plan of life insurance. This is an excellent plan, as far as the insured are concerned, but it is offering medical advice to those who are able to pay for almost nothing, if we compare what would be a just charge made to the members so insured if they had to employ a private physician.

Another reason why some physicians succeed less than others is because of certain cliques and rings which exist, to the disgrace of our noble profession, in this city.

To those of your readers who visit New York from a distance, I would say visit the New York Hospital and its library

I have endeavored, in a former letter, to give a brief sketch of the beauties of that splendid institution. I have visited its medical library lately, which is open and free to all. It contains 11,000 volumes of choice medical literature, and has a large number of medical periodicals. I have taken down a list of the journals to be found on the tables of the New York Hospital library, but I have thought it would be too voluminous to publish the names of all, and I will simply state that there are 19 English, 14 American, 22 French, and 27 German medical periodicals placed at the pleasure and for perusal of any one, free of charge, who will go there and benefit by reading the vast amount of knowledge contained in their pages.

Several of our medical societies have recently had their anniversary reunions, among others the New York Academy of Medicine. Prof. T. G. Thomas was the orator of the evening, and I need not add, delivered one of the most eloquent orations that it has been my good fortune to listen to. He felt, he said, somewhat reluctant in accepting the invitation to deliver the anniversary discourse, because, with his usual modesty, he thought there were other members who could fill that post of honor better than himself, but there was none who felt more proud at the distinction thus shown to him than himself. He reviewed the whole history of medical science from the Egyptians under the Pharaohs, the Jewish, the Arabian and Oriental schools of antiquity, the Roman and the Greek periods, and the status of medical science during the time that those nations produced the many eminent men whose names are even to-day familiar to every educated man. He referred to the middle ages, and the great progress made in hygiene by the invention of gunpowder. Before the invention of that deadly compound, human habitations were built close to each other, where the rays of the sun and pure air could only with difficulty enter. In those days the strong oppressed the weak, and wars were conducted

by hand to hand fights. The invention of gunpowder made the former close, dark, and ill-ventilated human abodes useless as habitations of defense against their enemies, and the streets and houses were built more rationally and thus contributed toward diminishing the pestilential outbreaks, to a great degree, which were formerly so frequent and destructive. The printing press was referred to as another aid towards diffusing medical knowledge; then came the inventions of the microscope, where one person could see with several 100 eyes at the same time. The discovery of the circulation of the blood by Harvey, has revolutionized the whole study and understanding of the origin and progress of disease. Where formally a black mass could be seen, now we see by the aid of the microscope acini, we find fibres, cells, granules and threads of living matter woven together so as to form an organ. We can distinguish a benign from a malignant tumor by the aid of our magnifying powers. What formerly was only conjecture is to-day demonstrable to every one who has eyes to see and ears to hear. Percussion and auscultation, the ophthalmoscope, the laryngoscope, the otoscope, the endoscope, etc., were all cited as instances of our great improvements and advance in the science of medicine. He defined the difference between medicine as an art and medicine as a science. The word science, derived from the latin word *scio* I know, means to know without the practical application of that knowledge. But medicine as an art is *to do*, or the practical application of science, therefore we say the art of surgery and the science of medicine—science and art must go hand in hand with each other. All theory is good only, and of practical utility if applied artistically to some purpose. The scientific and practical application of our better knowledge of to-day, he justly considered as a triumph, and a result of thorough study. He instanced a disease known by the name of Phlegmasia alba dolens, the nature of which was formerly misunderstood and wrong treatment

was the result—to-day we know the condition of the blood-vessel affected to be such that blood letting and antiphlogistics of an already debilitated patient, as formerly practiced, would be injurious instead of being beneficial; to-day the plugging up is removed by posture, by generally invigorating treatment, by measures of support, etc. But he asked, what do we know more to-day about whooping cough, its causes, its treatment, etc., than was known a thousand years ago. He very well knew that there were twenty gentlemen in the room present ready to spring to their feet, and to assert each of having a specific that will cure that disease.

What is plainer than that where there were so many specifics for one disease, quinine, chloral, belladonna, etc., there was none at all. In general, except mercury and the iodides, in syphilis, chlorate of potash in aphthous inflammations of the mucous membranes, of quinine in fever (intermittent), we had hardly any specific. Our duty, therefore, was to study the nature and causes of diseases, not by speculation and empty argument, but by demonstrations, ocular and otherwise. He paid a high tribute to American medical science. Mott, Francis, McDowell, Sims—they all contributed largely towards the advance of medical progress—but still he was free to acknowledge that to Germany belongs the credit to-day of having produced the most earnest and thorough workers in the field of medical advance. “Where have we a man?” he asked, “like Virchow, Recklinghausen, Klob, Brücke, Dubois, Raymond, Rokitansky, Laugenbeck, Liebig, and Waldeyer, Stricker, Wedl, Oppolzer, Niemeyer, Wunderlich, Traube, Billroth, Pitha, and hundreds of others whom German medical literature can boast of. Let our young men make up for our deficiencies, and let us extend our terms of study.” In Professor Thomas’s excellent address we heard a great deal about others, but nothing about himself. Let me add, if all medical practitioners had contributed so much by their writings and teachings in this country

or only one-tenth of it, as Dr. Thomas has, we would not need to look across the ocean for our most illustrious men, but we would find plenty of them at home.

In this connection, I regret to have to refer again to the exceedingly disagreeable controversy between Dr. J. Marion Sims, who has gone to Europe, to remain there until after the Paris Exposition, for the purpose of re-writing, as we are informed, his book on Uterine Surgery, on the one hand, and Drs. Peaslee, Emmett, and Thomas, on the other.

In a former letter I have, as an impartial reviewer, given you the verdict of those of my professional friends in this city, whom I have heard give an expression of their views in this controversy. Since then, I received an "*Extra*" of the *St. Louis Clinical Record*, dated St. Louis, September, 1877, William B. Hazard, M.D., editor, entitled "Editorial Interview with Dr. J. Marion Sims, in relation to the Woman's Hospital controversy." It commences with a quotation from Shakspeare: "Such men are never at heart's ease while they behold a greater than themselves." According to the *Record* mentioned, Dr. Sims has been maltreated, abused, and made the victim of personal and professional jealousy and ingratitude. This is published, we are told, by permission of Dr. Sims.

Dr. Sims acknowledges that Dr. Thomas was known as an admirable teacher, and a most accomplished physician, and he always entertained for his industry and talents the highest admiration. Sims attacks the three gentlemen collectively, and accuses them of having falsified the returns. He says: "Such 'bulldozing' of statistics was never heard of before in the annals of medicine." He (Sims) accuses Dr. Thomas of having pulled the wires against him at the time. He further says: "Doctors Peaslee, Emmett, and Thomas have no regard whatever for dates. They seem to jump at what they wish, whether consistent with facts or not." After this Sims says: "Many hospitals can boast of one or two great

names, but no other hospital in the world can boast of three such men as Peaslee, Emmett, and Thomas. Peaslee is the author of the best monograph in any language on any subject. I would rather be the author of his book on Ovarian Tumors than any other book that our medical literature has produced. Emmett has operated more frequently for vesico-vaginal fistula than any man living. He operates with great dexterity and success. He performs my operation now, just as I taught him twenty years ago. I feel proud of my pupil. His operation for lacerated cervix uteri will give him immortal fame, even if he should never contribute another thing to the progress of gynecology. Thomas is one of the most eloquent teachers that New York has ever produced. He, like Peaslee, is learned, classical, scholarly. He is the author of one of the best books ever written on the Diseases of Women, and as a practitioner he has no superior."

"After considering all the evidence," Dr. Hazard says, "we have no hesitation whatever in saying that we believe Dr. Sims has proved his case against Drs. Peaslee, Emmet, and Thomas. The charges made by Mr. Stuart have been investigated, and instead of his statements being unqualifiedly false, they are proven to be simply true." And he concludes by saying: "In the struggle for existence, which is yearly becoming a fiercer one in the American medical profession, Dr. J. Marion Sims has shown his ability to survive, although every deadly moral weapon has been used against him. Jealousy, calumny, vituperation, slander, malice, falsehood, treason have been combined against him, and he still lives to fight his enemies with the bright blade of truth, and confusion overwhelms the conspirators."

I have, in a former letter, given you my views regarding the difference between the highly honorable contesting parties, and I have, with many other physicians, arrived at a different conclusion from that arrived at by Dr. Hazard, of St. Louis. I still maintain, even after having carefully

re-read Dr. Sims's latest version of the affair, as given in his interview with Dr. H., and I must confess that I am yet convinced that Dr. Sims, although the founder of the New York Womans' Hospital, does Drs. Peaslee, Emmet, and Thomas great wrong by assuming that they conspired against him in order to force him to tender his resignation as one of the surgeons of the Womans' Hospital in the State of New York, or that they were capable of falsifying the records of that institution. Their reputations are established even by the testimony of Dr. Sims himself, as great operators, teachers, and authors. They have all the practice they can possibly attend to, and therefore had very little to fear from a rival even of Dr. Sims's skill and reputation. But let your readers form their own judgment. "*Audiatur et altera pars.*" For that reason alone I made the extracts from the "*Extra*" for what it is worth.

The members of the "Liberal Club of New York" have had quite a controversy with the New Jersey medical students, and why? As the name of the Club indicates, it consists of several hundred members, ladies and gentlemen of all nationalities, all creeds, without distinction of race, color, or station in life. It numbers among its members merchants, lawyers, musicians, painters, clergymen, soldiers, etc. Its object being to hold weekly meetings for the purpose of listening to, and discussing, any subject which any member, or even others who are not members, may bring before the society, after having received permission, or having received an invitation to read a paper or to deliver a discourse. This society of Liberals will hear a lecture one evening *for religion*, the next *against religion*, etc. The idea being of having a society where opportunity is offered for the ventilation of any topic which any one desires publicly to discuss. It is not to be wondered at, therefore, that communism, imperialism, republic and monarchy, free-love, resumption of specie payment, and repudiation should, in

succession, find their advocates among the million inhabitants of this city. The Club has, unfortunately, hired the hall of the College of Physicians and Surgeons, where the lectures of the medical students are being held, in daytime, every Friday. A few weeks ago a well-known quack doctor, who had the impudence, without any qualification whatever to say anything worth listening to, to speak before the Liberal Club, and said "that the medical students were being given a license to murder wholesale!" Some medical students, attracted to the lecture-room by idle curiosity, heard this remark, which was made and repeated by an "ex-clergyman," and naturally enough hissed at such an outrageous utterance, and tried to break up the meeting. Thereupon the police were notified, and two medical students were arrested and placed in jail. Brought before the magistrate next morning, they were at once liberated, and the officer who made the arrest was severely reprimanded. The colleagues of the students were very indignant at the arrest of their friends, and held meetings to sue for damages for false imprisonment, and concluded to break up the meeting of the Liberals at their next session. These latter, however, hearing of the determination of the students, asked for, and obtained, assistance from the police, and have held two meetings since under the protection of the police force, stationed in and around the College. By coughing, sneezing and stamping, and placing strong cayenne pepper upon the floor, the students attempted to dislodge the Liberals, but have thus far not been successful.

General Sigel read a paper before the Liberals entitled, "Are the bones found under the altar of a church really those of Christopher Columbus, or are they those of some other man?" The general stated, as he was no medical man he could not say whether bones of a large man—Columbus was a very tall man—could be boxed up in a little box sixteen inches long, and eight inches high, and eight inches

wide. Second query: Can a medical man tell whether bones deposited nearly four hundred years ago could be still found as bones, without having decomposed or fallen asunder? Third query: Could not these bones belong to some other man, woman or child, and not be those of Christopher Columbus?" "Some one," he said, "I fear I may offend some one in the room, pretended in Germany to have found the bones of the Holy Virgin, Maria, but the German physicians, who were learned, more so than those of Santo Domingo, where the pretended bones of Christopher Columbus were found, decided that those bones were the bones of a chicken." Such was the great lecture of the great General Sigel on the bones of Columbus.

Now, the reason why I devote so much space to bones made about it, by Sigel, is this: I would like to know in how long a time bones do decompose and fall asunder, generally, in our cemeteries? Let some one inform me on this subject. Of course, in the dry state, bones will remain in their natural state indefinitely. Bones have been found of extinct animals, in cold regions, where they must have laid thousands of years. The same is the case with Egyptian mummies. The bones of Christopher Columbus, lying in a church at Santo Domingo, could remain intact for centuries. The arm of St. Stephen, King of Hungary, who died in the eleventh century, is yet to be seen in St. Stephen's Church, in Vienna, Austria, intact, and unaltered. But how long it takes for a skeleton to fall apart, in a grave damp and favorable to decomposition, is, I think, dependent upon the moisture of the ground. In some places five to six years may suffice; in other drier localities it may take twenty to thirty years. In a medico-legal point of view, this query may be of some interest.

Truly yours,

DR. RUDOLF TAUSZKY.



